SHARP SERVICE MANUAL

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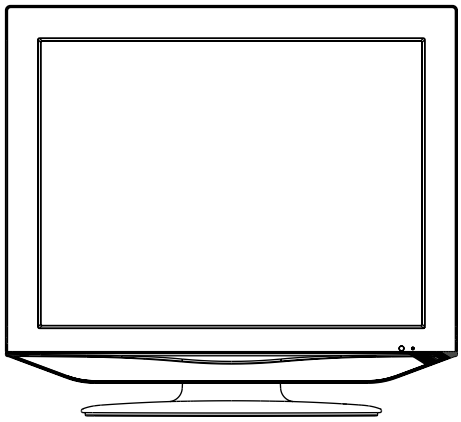

LCD COLOR TELEVISION

MODEL LC-20S5E-BK

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

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SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.
Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

4. BE CAREFUL WITH THE LCD PANEL

Avoid a shock to the panel while servicing. Take enough care to deal with it.

5. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

6. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

(INSULATION CHECK PROCEDURE)

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the eternal exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

[Note 1]

If you have not the 500V insulation resistance meter, use a Tester.

[Note 2]

External exposure metal: Antenna terminal
Earphone jack

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)

1. MODEL NUMBER and VERSION LETTER
   The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

IMPORTANT

When you exchange IC and Transistor with a heat sink, apply silicon grease (YG6260M) on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease.
(Old grease may cause damage to the IC and Transistor).

HOTEL MODE FUNCTION

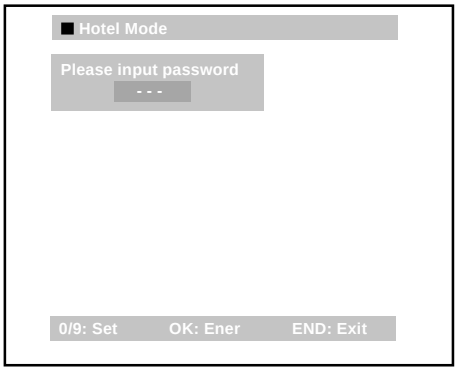
The following can be set by the Hotel mode function.

Setting item	FUNCTION
Hotel mode	ON/OFF setting for Hotel mode function.
Power on fixed	Effective/invalid setting of POWER button on the set and remote cotrol. (*Note 1)
Maximum volume	Setting of the maximum volume value (1~50).
Volume fixed	Effective/invalid setting of volume fix level function. (*Note 2)
Volume fix level	Setting of output volume value.
RC button	Effective/invalid setting of remote control key operation. (*Note 3)
Panel button	Effective/invalid setting of main key operation. (*Note 4)
Menu button	Effective/invalid setting of menu key operation of set and remote cotrol. (*Note 4)
On Screen Display	Display/non-display setting of analog menu, CALL, CH, audio, backlight, and volume level. (*Note 5)
Input mode start	Setting of input source at power supply On.
Input mode fixed	During the power on, effective/invalid setting of tuning the channel and input change operation. (*Note 6)
Reset	Various settings of the Hotel mode function return initial State.

Note 1) When setting it to “Fixed", the Sleep timer setting is turned off.
Note 2) When setting it to “Fixed", the VOL+/- key operation of a main/ remote control and the MUTE key operation of a remote control become invalid.
Note 3) When setting it to “Fixed", the remote control operation and the service mode function in Hotel mode are effective.
Note 4) When setting it to “Fixed", the service mode function in Hotel mode are effective.
Note 5) The Sleep timer setting is turned off when setting it to "No", and the audio change with AUDIO key is invalid.
Note 6) The Input mode fixed setting becomes effective when the Input mode start setting except for " Normal" setting.

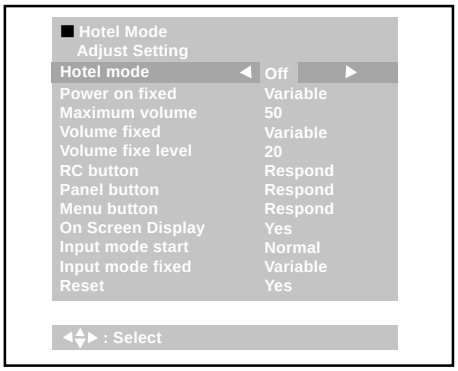
To set the Hotel mode, please follow the steps below.

1. In power off mode, press and hold the ‘VOLUME +’ button on the front panel.
2. Simultaneously press and hold the ‘ ’ button on the front panel.
3. Hold both keys, press the POWER button on the front panel.
4. The password screen is displayed.
5. Press it in order of ‘0’, ‘2’ and ‘7’ key of a remote control unit.
   Then press the ENTER button.
6. The Hotel mode setting menu will appear.
7. Using the LEFT/RIGHT on the remote control, set the Hotel Lock to on.
8. Turn off the power.
   The Hotel Lock has now been set up.



To release the Hotel mode, please follow the steps below.

1. In power off mode, press and hold the ‘VOLUME+’ button on the front panel.
2. Simultaneously press and hold the ‘ ’ button on the front panel.
3. Hold both keys, press the POWER button on the front panel.
4. The password screen is displayed.
5. Press it in order of ‘0’, ‘2’ and ‘7’ key of a remote control unit.
   Then press the ENTER button.
6. The Hotel mode setting menu will appear.
7. Using the LEFT/RIGHT on the remote control, set the Hotel Lock to off.
8. Turn off the power.
   The Hotel Lock has now been cleared.

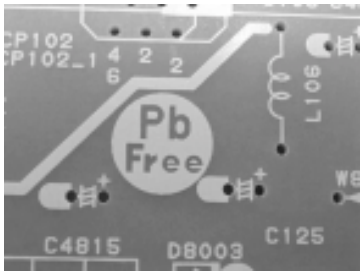


NOTE: When the ‘Power on fixed‘ is set to ‘fixed’, press and hold the ‘VOLUME +’ button and ‘ ’ button on the front panel simultaneously. Hold both keys, press the POWER button on the front panel, the power is turned off.
Then follow steps 1~8.

ABOUT LEAD FREE SOLDER (PbF)

Distinction of PbF PCB:

PCBs (manufactured) using lead free solder will have a PbF printing on the PCB.
(Please refer to figures.)



Caution:

- Pb free solder has a higher melting point than standard solder;
  Typically the melting point is 86°F~104°F(30°C~40°C) higher.
  Please use a soldering iron with temperature control and adjust it to 650°F ± 20°F (350°C ± 10°C).
  In case of using high temperature soldering iron, please be careful not to heat too long.
- Pb free solder will tend to splash when heated too high (about 1100°F/ 600°C).
- All products with the printed circuit board with PbF printing must be serviced with lead free solder.
  When soldering or unsoldering, completely remove all of the solder from the pins or solder area,
  and be sure to heat the soldering points with the lead free solder until it melts sufficiently.

Recommendations

Recommended lead free solder composition is Sn-3.0Ag-0.5Cu.

GENERAL SPECIFICATIONS

G-1	**TV System**	LCD	LCD Size / Visual Size	19.7 inch / 500.3mmV
			LCD Type	Color TFT LCD
			Number of Pixels	640(H) x 480(V)
			View Range Left/Right	85/85 degree
			Up/Down	85/85 degree
		Color System		PAL, SECAM
		Speaker		2 Speaker
			Position	Front
			Size	1.2 x 2.8 inch
			Impedance	8 ohm
		Sound Output	MAX	2W + 2W
			10%(Typical)	---
		AV Input Receivable	NTSC3.58	Yes
			NTSC4.43	Yes
			PAL60Hz	Yes
G-2	**Tuning System**	Broadcasting System	Analog	CCIR, French System B/G D/K I/I SECAM L/L'
			Digital	-
		Tuner and	System	1Tuner
		Receive CH	Destination	IR. + UK + CCIR Hyper + France CATV
			CH Coverage	IreE2~E4, X~Z+2, S1~S10, E5~E12, S11~S41, E21~E69
		Intermediate Frequency		PAL BG / PAL II / PAL DK, SECAM L / SECAM L' (VL)
		Analog	Picture(FP)	38.9 / 38.9 / 38.9 / 33.9 MHz
			Sound(FS)	33.4 / 32.9 / 32.4 / 40.4 MHz
			FP-FS	5.5 / 6.0 / 6.5 / 6.5 MHz
		Digital		-
		ATS Area Setting		Germany
		Auto Tuning Method		ALL Band (Not CCIR CH Plan)
		Preset CH	Analog	99
			Digital	-
		Stereo/Dual TV Sound		Nicam/A2 Dual
		Tuner Sound Muting		Yes
G-3	**Power**	Power Source	AC	220~240V AC 50/60Hz
			DC	---
		Power Consumption	at AC	74W at AC 230V 50Hz
			at DC	---
			Stand by (at AC)	1W
			Per Year	--- kWh/Year
		Protector	Power Fuse	Yes
			Safety Circuit	Yes
			IC Protector (Micro Fuse)	Yes
G-4	**Regulation**		Safety	CE(EN60065:2002), SEMKO
			Radiation	CE
			X-Radiation	---
G-5	**Temperature**		Operation	0°C ~ +40°C
			Storage	-20°C ~ +60°C
G-6	**Operating Humidity**			35%RH ~ 75% RH
G-7	**OSD Language**			English, Spanish, German, French, Italian, Swedish, Dutch, Russian, Portuguese, Turkish, Greek, Finnish, Polish
G-8	**Clock and Timer**	Sleep Timer	Max Time	120 Min
			Step	30 Min
		On/Off Timer	Program(On Timer / Off Timer)	No
		Wake Up Timer		No
		EPG Timer	Digital tuner only	No
		Timer Back-up (at Power Off Mode)	more than	-- Min Sec

GENERAL SPECIFICATIONS

G-9	**Remote Control**	Unit		RC-NB
		Glow in Dark Remocon		No
		Remocon Format		SHARP
		Format		SHARP
		Custom Code		10000 / 10001 / 01111
		Power Source	Voltage(D.C)	3V
			UM size x pcs	UM-3 x 2 pcs
		Total Keys		40
		Keys	Standby/On	Yes
			BACKLIGHT	Yes
			Mute	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0	Yes
			Flashback	Yes
			Input select	Yes
			Volume up	Yes
			Volume down	Yes
			Channel up	Yes
			Channel down	Yes
			WIDE MODE	Yes
			Sound Mode	Yes
			Display information	Yes
			SLEEP	Yes
			Teletext	Yes
			MENU	Yes
			UP	Yes
			LEFT	Yes
			OK / Channel list	Yes
			RIGHT	Yes
			DOWN	Yes
			END	Yes
			TOP/BOTTOM/FULL	Yes
			REVEAL	Yes
			HOLD	Yes
			SUBTITLE	Yes
			SUBPAGE	Yes
			RED	Yes
			GREEN	Yes
			YELLOW	Yes
			BLUE	Yes

GENERAL SPECIFICATIONS

G-10	**Features**	Auto Power Off (Auto Shut Off)		Yes
		BBE		No
		Auto Search		Yes
		Sort (CH Allocation)		Yes
		Rotate		No
		Clock (Digital only)		No
		Just Clock Function		No
		Game Position		No
		CH Label		Yes
		T'Text		Yes
			Text type	Fastext (FLOF) / Toptext
			Text Language	English, French, Swedish, Hungarian, Turkish, German, Portuguese, Spanish, Italian, Greek, Slovakian, Russian, Polish, Czech, Rumanian, Estonian, Lettish, Lithuanian, Ukrainian, Croatian, Slovenian, Latvian
		Subtitle		Yes
		Top Over View (Analog teletext only)		No
		Picture size		Yes
		Position (Picture Scroll)		No
		Surround		No
		Backlight		Yes
		Power On Memory		Yes
		Auto Set Up (Fast installation)	Auto tuning (Analog tuner)	Yes
			CH sort	Yes
			ATS	Yes
			Auto clock (Analog tuner)	No
			Plug in start (Analog tuner)	Yes
		Picture Setting (TV)	Brightness , Contrast , Color	Yes
			Tint	Yes
			Sharpness	Yes
			Black Stretch	Yes
			Backlight	Yes
			Picture Preference (AV Mode)	Yes
			Color Temperature	Yes
			DNR	Yes
		Picture Setting (PC)	Brightness , Contrast	Yes
			Color Temperature	Yes
		Sound Setting	Tone Control (Bass/Treble/Balance)	Yes
			Sound via	No
			Auto Vol	Yes
			Clear Voice	Yes
			Sound wide	Yes
		Lock	Hotel Lock	Yes
			Child Lock	Yes
		PC Monitor Input		Yes
			VGA (640x480)	Yes (60Hz)
			VGA (720x400)	No
			WVGA (848x480)	No
			SVGA (800x600)	Yes (60Hz)
			XGA (1024x768)	No
			WXGA (1280x768)	No
			WXGA (1280x720)	No
			WXGA (1360x768)	No
			SXGA (1280x1024)	No
		Variable Audio Out		No
		Freeze frame		No
		Choke Coil		No
		Rec Screen Status		No
		Digital Text (VBI teletext)		No
		MHEG-5		No
		MHP		No
		EPG (BBC type 8Days Digital tuner only)		No
		OAD (Over Air Download) (UK only)		No
		Common Interface (Digital tuner only)		No
		LCN Renumber		No
		Country select (Digital Only)		No
		Ch sorting based on Ch List (Digital/Germany only)		No
		Ch Allocation (Digital)		No
		Favorite Ch (Digital)		No
		Rename Service/Carrier (Digital)		No

GENERAL SPECIFICATIONS

G-11	**Accessories**	Owner's Manual		Language	English, German, French, Italian, Dutch, Spanish Greek, Portuguese, Swedish, Finnish, Danish Norwegian, Polish, Hungarian, Czech, Slovak, Ukrainian
				w/Guarantee Card	No
		Remote Control Unit			Yes
		Rod Antenna			No
				Poles	-
				Terminal	-
		Loop Antenna (W/ Antenna Change Plug)			No
				Terminal	-
		U/V Mixer			No
		DC Car Cord (Center+)			-
		Guarantee Card			No
		Warning Sheet			No
		Circuit Diagram			No
		Antenna Change Plug			No
		Service Facility List			No
		Important Safeguard			No
		Dew/AHC Caution Sheet			-
		Quick Set-up Sheet			No
		Battery			Yes
				UM size x pcs	UM-3 x 2 pcs
				OEM Brand	No
		AC Adapter			-
		AC Cord (for AC Adapter)			-
		AC Cord			Yes
		AV Cord (2Pin-1Pin)			No
		Registration Card			No
		Information Sheet(WEEE)			No
		300 ohm to 75 ohm Antenna Adapter			No
		Cable Clamp (x1)			Yes
		Information Sheet(Eco Sheet)			Yes (From '07 MAR O/R)
G-12	**Interface**	Switch	Side	Sub Power (Tact)	Yes
				System Select	No
				Main Power SW	No
				Sub Power (Push)	No
				Channel Up/Menu Up	Yes
				Channel Down/Menu Down	Yes
				Volume Up/Menu >	Yes
				Volume Down/Menu <	Yes
				Input Select	Yes
				Menu	Yes
		Indicator		Power	No
				Stand-by	No
				Power / Stand-By	Yes (Green / Red)
				On Timer	No
				OPC	No
		Terminals	Rear	Video Output	No
				Color Stream 2	No
				Diversity	No
				Ext Speaker	No
				DC Jack 12V (Center +)	No
			Bottom	VHF/UHF Antenna Input	DIN x1
				AC Inlet	Yes
				Audio Output (L, R)	RCA x2 (Fix)
				Other Terminal	RS-232C x1
				Euro Scart (21Pin) EXT1	Yes (CVBS In, RGB In, Tuner Out)
				Euro Scart (21Pin) EXT2	Yes (CVBS In, Y/C In, Video Out)
				PC Monitor Input (D-Sub)	Yes
				Audio Input (Mini Pin)	Yes
			Side	CI Card slot	No
				Audio Input	No
				Video Input EXT3	RCA x1
				Audio Input EXT3 (L/Mono, R)	RCA x2 (L/MONO,R White,Red)
				S Video Input EXT3	S-Jack x1
				Other Terminal	Headphone x1
			Front	Other Terminal	No
G-13	**Set Size**			Approx. W x D x H (mm)	478 x 225 x 434.5
				w/o Stand, Handle Approx. W x D x H (mm)	478 x 89.4 x 399.5
G-14	**Weight**			Net Approx.	6.2kg (13.7 lbs)
				Gross Approx.	8.2kg (18.1lbs)

GENERAL SPECIFICATIONS

G-15	**Carton**	Master Carton		No
			Content	---- Sets
			Material	-- /--
			Dimensions W x D x H(mm)	-- x -- x --
			Description of Origin	No
		Gift Box	Material	Double/Brown
			Dimensions W x D x H(mm)	588 x 303 x 542
			Description of Origin	Yes (Made in Japan)
		Drop Test		Natural Dropping At 1 Corner / 3 Edges / 6 Surfaces
			Height (cm)	60
		Container Stuffing		560 Sets/40' container
		w/Pallet		Yes
		w/Wrapping		No
G-16	**Material**	Cabinet	Cabinet Front	PC+ABS 94V-0 Non-Halogen
			Cabinet Rear	PC+ABS 94V-0 Non-Halogen
		PCB	Non-Halogen	No
			Eyelet	Yes
G-17	**Environment**	Environmental standard requirement (by buyer)		Green procurement of SHARP
			Pb-free	Phase3 (Phase3A)
			Measures for Whisker	Yes
		WEEE		Yes

DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

1-1: COVER BACK/STAND ASS'Y (Refer to Fig. 1-1)

1. Unlock the 2 supports ①.
2. Remove the Cover Back in the direction of arrow (A).
3. Remove the 3 screws ②.
4. Remove the Stand Ass'y in the direction of arrow (B).
5. Remove the 5 screws ③.
6. Remove the Frame Stand in the direction of arrow (C).
7. Remove the 4 screws ④.
8. Remove the Angle Stand in the direction of arrow (D).

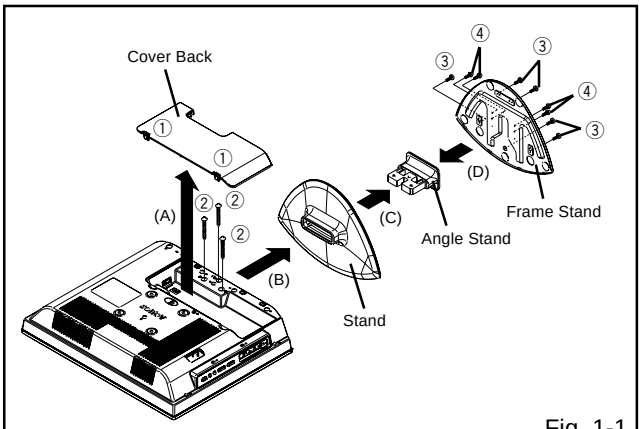


Fig. 1-1

1-2: BACK CABINET (Refer to Fig. 1-2)

1. Remove the 9 screws ①.
2. Remove the 4 screws ②.
3. Remove the Back Cabinet in the direction of arrow.

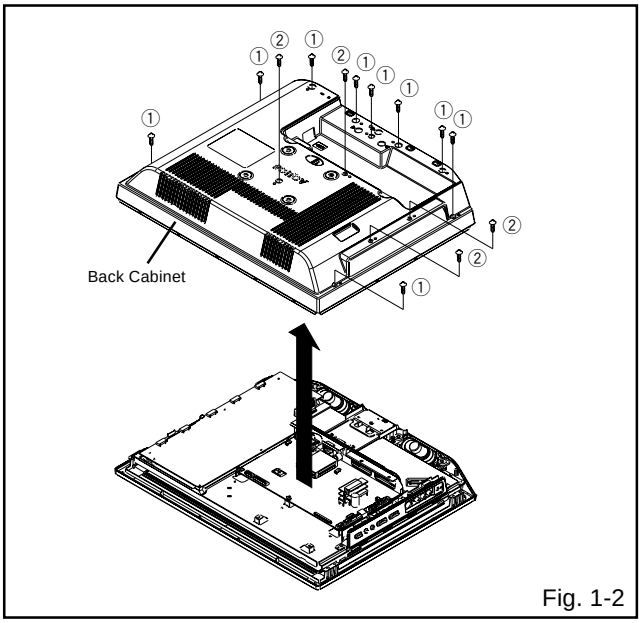


Fig. 1-2

1-3: OPERATION PCB (Refer to Fig. 1-3)

1. Disconnect the following connectors: (CP301 and CP4201).
2. Remove the 2 screws ①.
3. Remove the Plate Button Ass'y in the direction of arrow (A).
4. Remove the 4 screws ②.
5. Remove the Operation PCB in the direction of arrow (B).

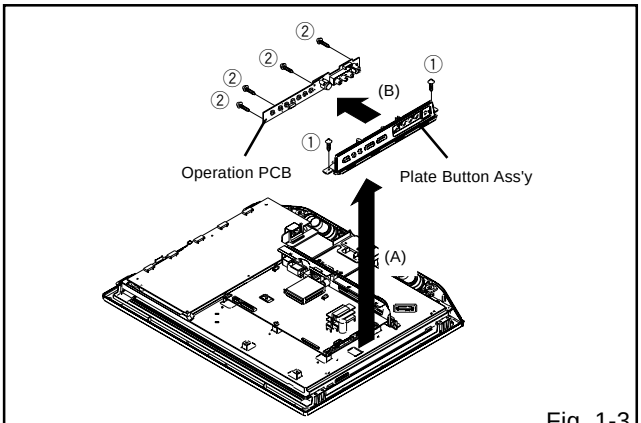


Fig. 1-3

1-4: MAIN PCB (Refer to Fig. 1-4)

1. Disconnect the following connectors: (CP302, CP3400, CP3401, CP4301 and CP7201).
2. Remove the 7 screws ①.
3. Remove the Main PCB in the direction of arrow (A).
4. Remove the 2 screws ②.
5. Remove the 3 screws ③.
6. Remove the Plate Jack in the direction of arrow (B).
7. Remove the Shield Jack in the direction of arrow (C).

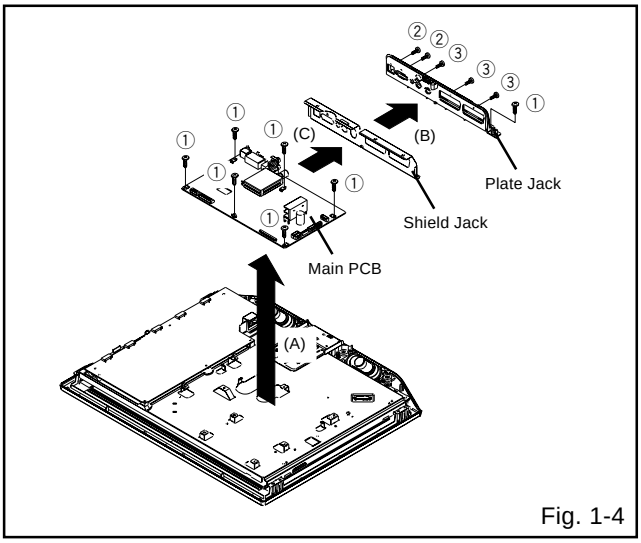


Fig. 1-4

DISASSEMBLY INSTRUCTIONS

1-5: POWER PCB (Refer to Fig. 1-5)

1. Disconnect the following connectors:
   (CP6700, CP6701, CP6702, CP6703 and CP6705).
2. Remove the 5 screws ①.
3. Remove the Power PCB in the direction of arrow (A).
4. Remove the Holder PCB in the direction of arrow (B).

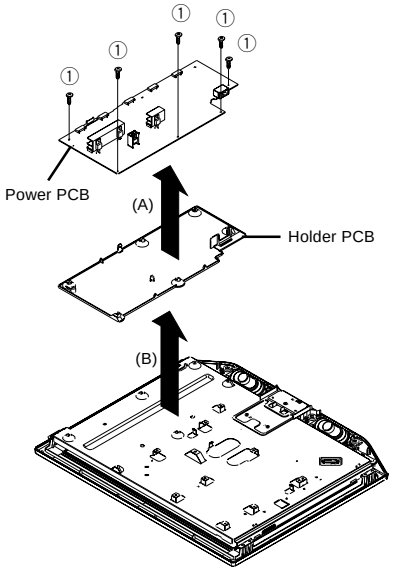


Fig. 1-5

1-6: LCD COVER/LCD PANEL (Refer to Fig. 1-6)

1. Remove the 2 screws ①.
2. Remove the Angle Frame in the direction of arrow (A).
3. Remove the LCD Cover in the direction of arrow (B).
4. Remove the LCD Panel in the direction of arrow (C).

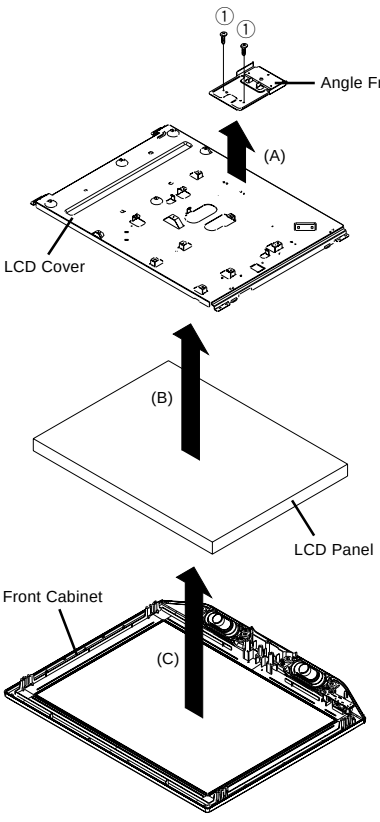


Fig. 1-6

DISASSEMBLY INSTRUCTIONS

2. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. **(Refer to Fig. 2-1.)**

   NOTE

   Masking is carried out on all the parts located within 10 mm distance from IC leads.

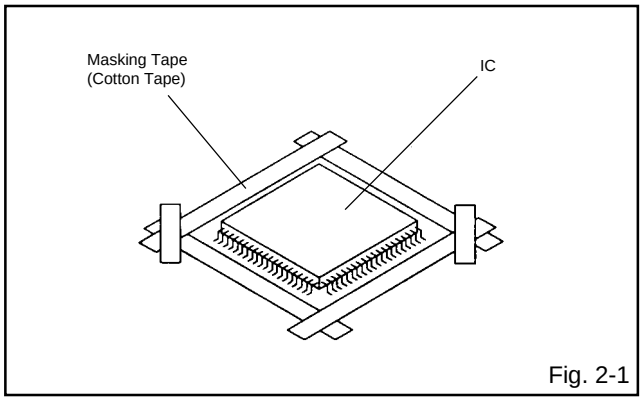


Fig. 2-1

2. Heat the IC leads using a blower type IC desoldering machine. **(Refer to Fig. 2-2.)**

   NOTE

   Do not rotate or move the IC back and forth , until IC can move back and forth easily after desoldering the leads completely.

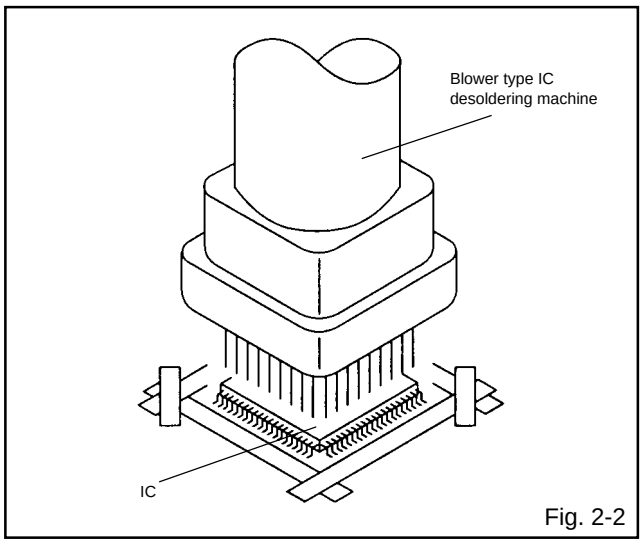


Fig. 2-2

3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using tweezers and remove the IC by moving with the IC desoldering machine. **(Refer to Fig. 2-3.)**

   NOTE

   Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.

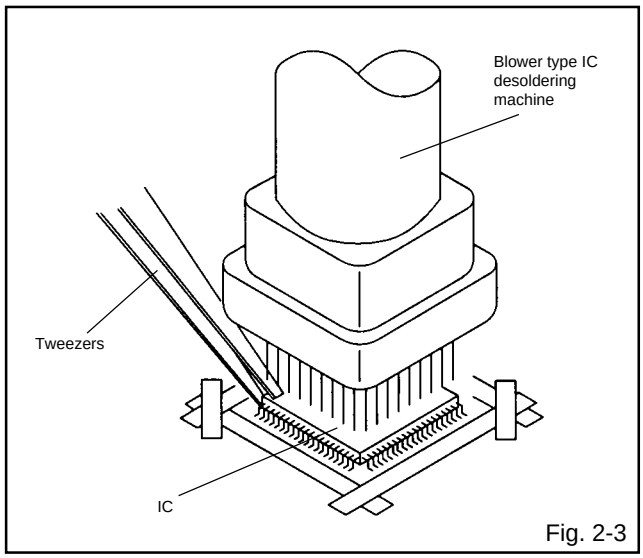


Fig. 2-3

4. Peel off the Masking Tape.

5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 2-4.)**

   NOTE

   Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.

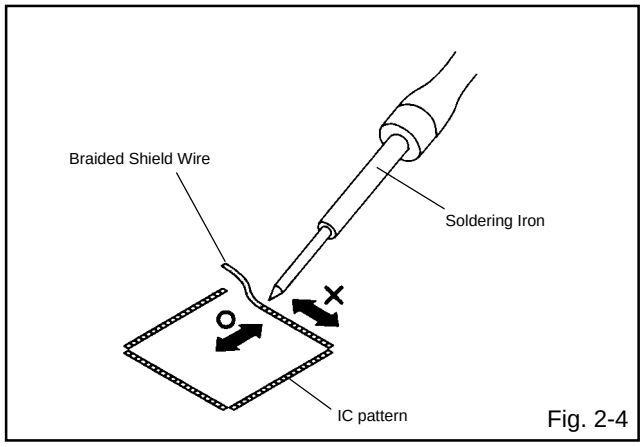


Fig. 2-4

DISASSEMBLY INSTRUCTIONS

INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. **(Refer to Fig. 2-5.)**

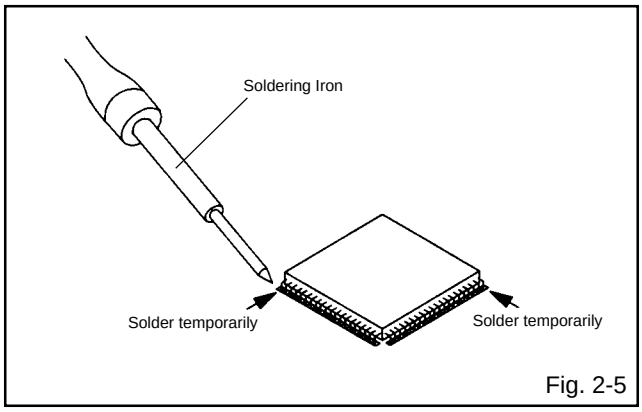


Fig. 2-5

2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 2-6.)**

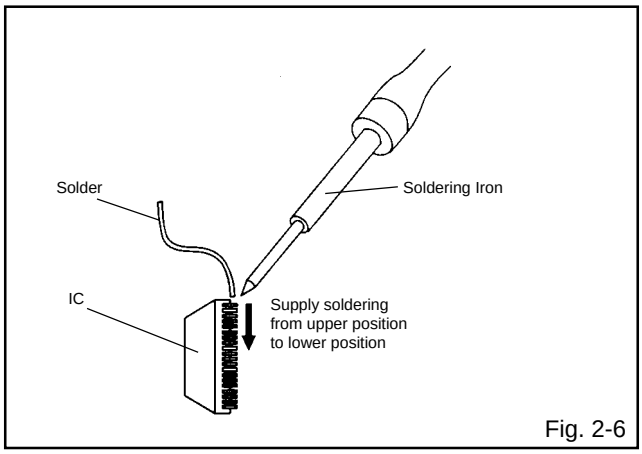


Fig. 2-6

3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 2-7.)**

   NOTE

   Do not absorb the solder to excess.

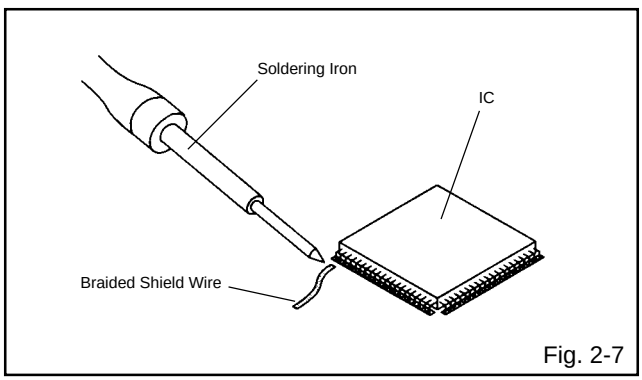


Fig. 2-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 2-8.)**

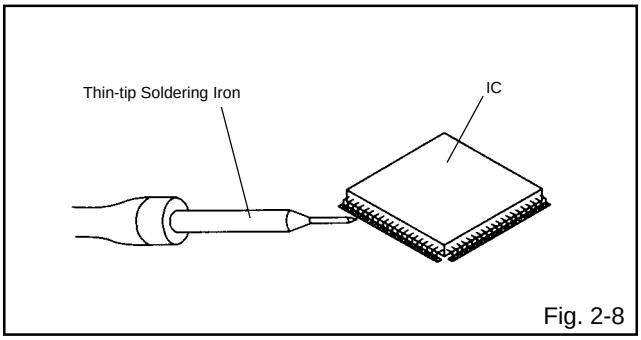


Fig. 2-8

5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass.
   Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

   NOTE

   When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, always be sure to replace the IC in this case.

SERVICE MODE LIST

This unit is provided with the following SERVICE MODES so you can repair, examine and adjust easily.

To enter to the SERVICE MODE function, press and hold both buttons simultaneously on the main unit and on the remote control for more than the standard time in the appropriate condition. (See below chart.)

Set Condition	Set Key	Remocon Key	Standard Time	Operations
POWER ON	VOL. DOWN (Minimum)	1	2 sec.	Initialization of factory TV data. NOTE: If you set factory initialization, the memories are reset such as the channel setting, and the POWER ON total hours.
POWER ON	VOL. DOWN (Minimum)	2	2 sec.	Check of the SUM DATA, MICON VERSION on the screen. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
POWER ON	VOL. DOWN (Minimum)	6	2 sec.	POWER ON total hourson the screen. Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
POWER ON	VOL. DOWN (Minimum)	9	2 sec.	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).

WHEN REPLACING EEPROM (MEMORY) IC

CONFIRMATION OF CHECK SUM, MICON VERSION AND POWER ON TOTAL HOURS.

Initial total of MEMORY IC and REGISTER DATA, MICON VERSION and POWER ON total hours can be checked on the screen. Total hours are displayed in 16 system of notation.

NOTE: If you set a factory initialization, the total hours is reset to "0".
Please refer to "CONFIRMATION OF INITIAL DATA" when SUM DATA is not corresponding.

1. Turn on the POWER.
2. Set the VOLUME to minimum.
3. Press both VOL. DOWN button on the set and Channel button **(2)** on the remote control for more than 2 seconds.
4. After the confirmation of CHECK SUM, MICON VERSION and POWER ON TOTAL HOURS, turn off the power.

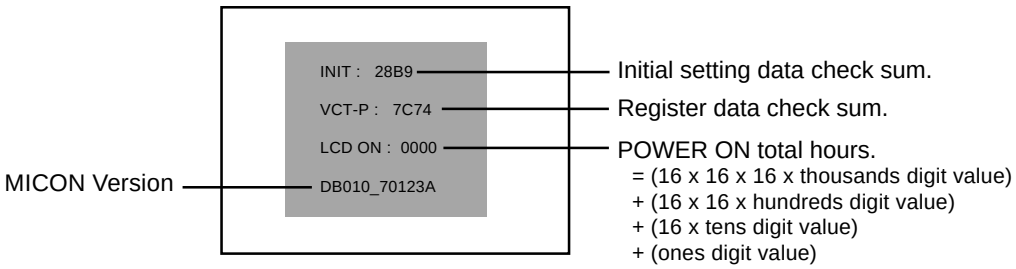

INIT : 28B9
VCT-P : 7C74
LCD ON : 0000
DB010_70123A
MICON Version
Initial setting data check sum.
Register data check sum.
POWER ON total hours.
= (16 x 16 x 16 x thousands digit value)
+ (16 x 16 x hundreds digit value)
+ (16 x tens digit value)
+ (ones digit value)

FIG. 1

CONFIRMATION OF INITIAL DATA

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to INITIAL SETTING TABLE (Attached "INITIAL DATA").

1. Turn on the POWER, and set to the TV mode.
2. Set the VOLUME to minimum.
3. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 2 seconds. ADDRESS and DATA should appear as FIG 2.

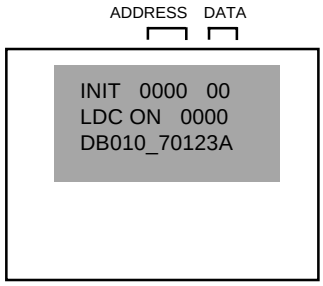


FIG. 2

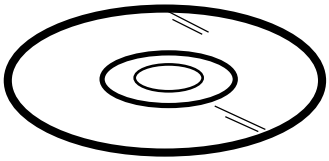
4. ADDRESS is now selected and should "blink". Using the UP/DOWN buton on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
5. Press RIGHT/LEFT button to select DATA. When DATA is selected, it will "blink".
6. Again, step through the DATA using UP/DOWN button until required DATA value has been selected.
7. Pressing RIGHT/LEFT button will take you back to ADDRESS for further selection if necessary.
8. Repeat steps 4 to 6 until all data has been checked.
9. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

After the data input, set to the initializing of shipping.

10. Turn POWER on.
11. Press both VOL. DOWN button on the set and Channel button **(1)** on the remote control for more than 2 seconds.
12. After the finishing of the initializing of shipping, the unit will turn off automatically.

The unit will now have the correct DATA for the new MEMORY IC.

SERVICING FIXTURES AND TOOLS

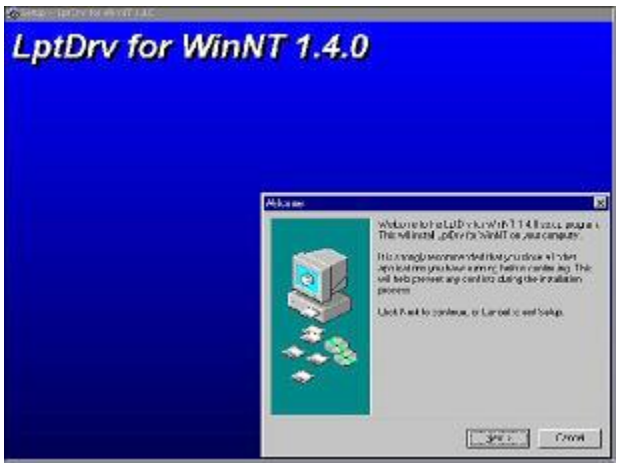
JG203 MICON PROGRAM JIG KIT 25-4	JG176 EU LCD MICON VER UP ROM DISC JG204 MICON UPDATE TOOL DISC 

Ref. No.	Part No.	Parts Name	Remarks
JG176	APJG176118	EU LCD MICON VER UP ROM DISC	There are EEPROM DATA and FIRMWARE in Disc.
JG203	APJG203000	MICON PROGRAM JIG KIT 25-4	Connect the set to personal computer.
JG204	APJG204000	MICON UPDATE TOOL DISC	There is WRITING TOOLS in Disc.

INSTALL FOR WRITING TOOLS

1. Set the MICON UPDATE TOOL DISC (JG204) to PC.

2. Install the LPT driver.
   NOTE : It is necessary to install according to the PC.
   Windows 95/98 : Setup_LptDrv_v0104_9x.exe
   Windows 2000/XP : Setup_LptDrvDev_v020201_XP_2000.exe
   Windows NT : Setup_LptDrv_v0104_NT.exe



3. Re-boot the PC.

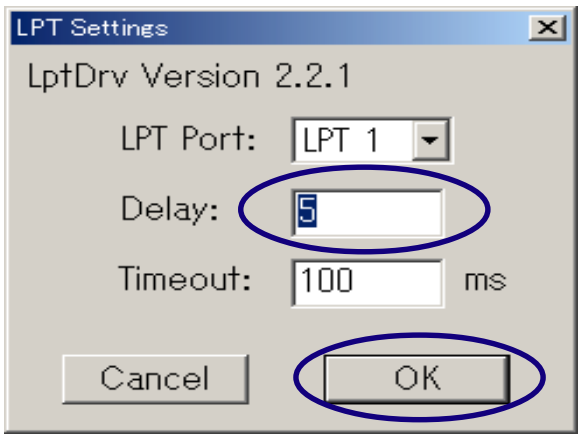
4. Install the “Setup_Visual_I2C_v3-2-3b8h.exe”.

5. Install the “Setup_VI2C_for_VCT6wxyP_v0202.exe”.

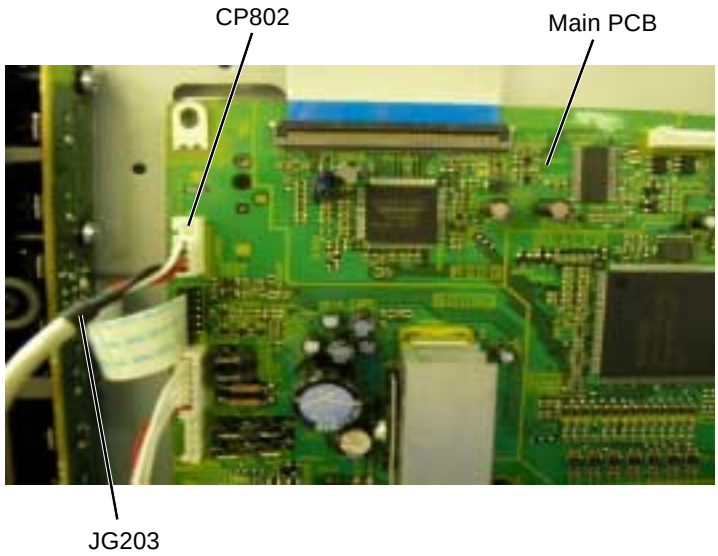
UPDATE FOR VCTP SOFTWARE

Before Update the VCTP Software, it is necessary to install the WRITING TOOLS into the PC.
For the installation of WRITING TOOLS, refer to the "INSTALL FOR WRITING TOOLS".

1. Unplug the AC cord, and remove the back cabinet.
2. Short circuit the 1 pin and 2 pin of CP802 on the Main PCB.
3. Insert the AC cord.
4. Remove the short circuit 1 pin and 2 pin of CP802 on the Main PCB.
5. Set the EU LCD MICON VER UP ROM DISC (JG176) to PC.
6. Start the "VCTP" (Writing Tools).
7. Select the "LPT Preferences" from File/Preferences menu, then input "5" to the value of "Delay", and press "OK".
   NOTE: This step is not necessary from next time.

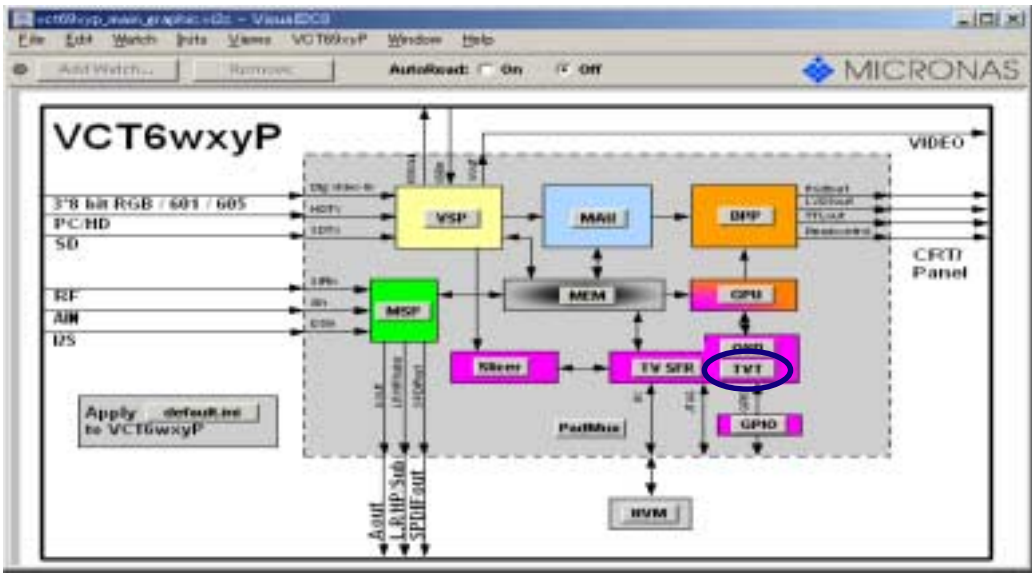


8. Using the MICON PROGRAM JIG KIT 25-4 (JG203), connect the PC Terminal and 1~4 pin of CP802 on the Main PCB (JG203(Red line) =1 pin of CP802).



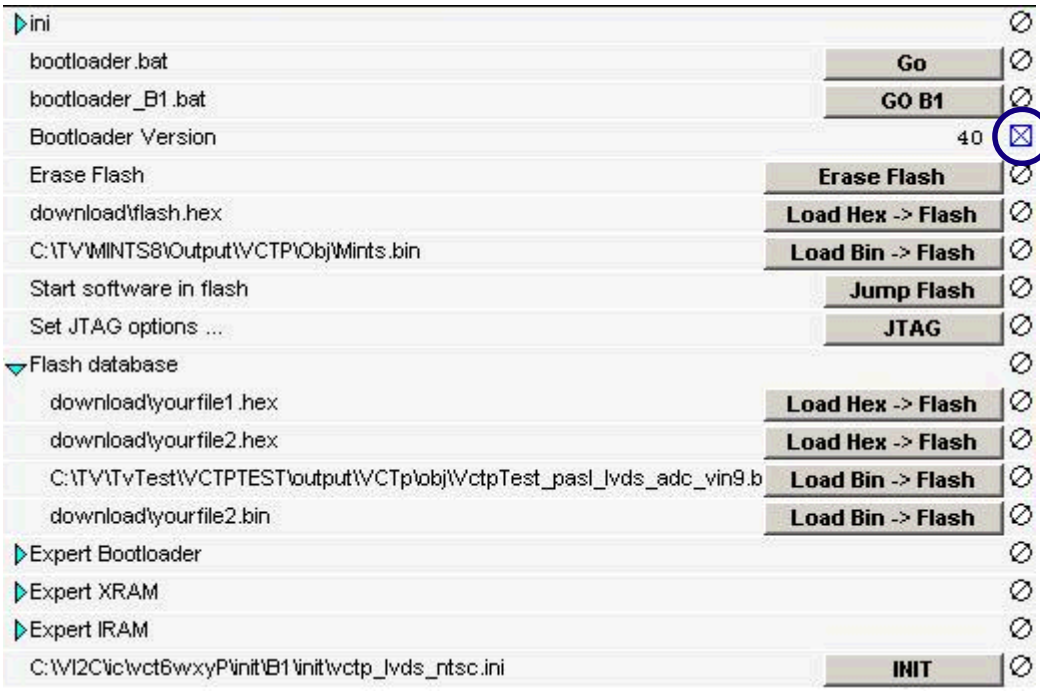
UPDATE FOR VCTP SOFTWARE

9. Press the “TVT”.



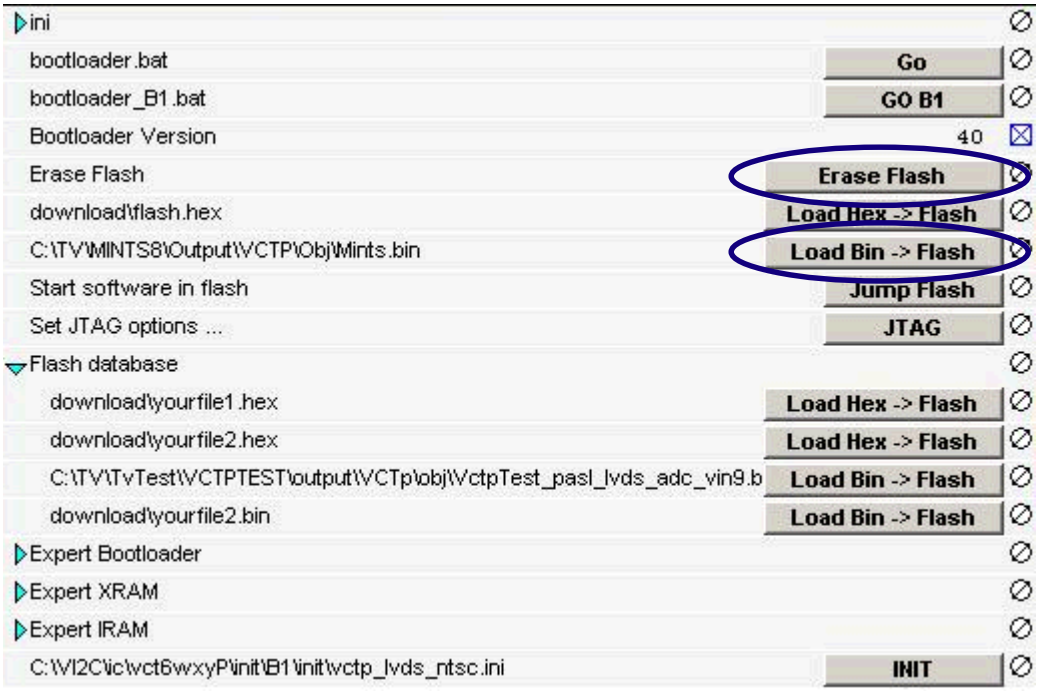
10.Remove the check of “Bootloader Version”, and check it again.

NOTE : When the number of the side of the check box becomes 40, you can proceed to next step.
If the number doesn’t become 40, check the connection and try again from step 1.

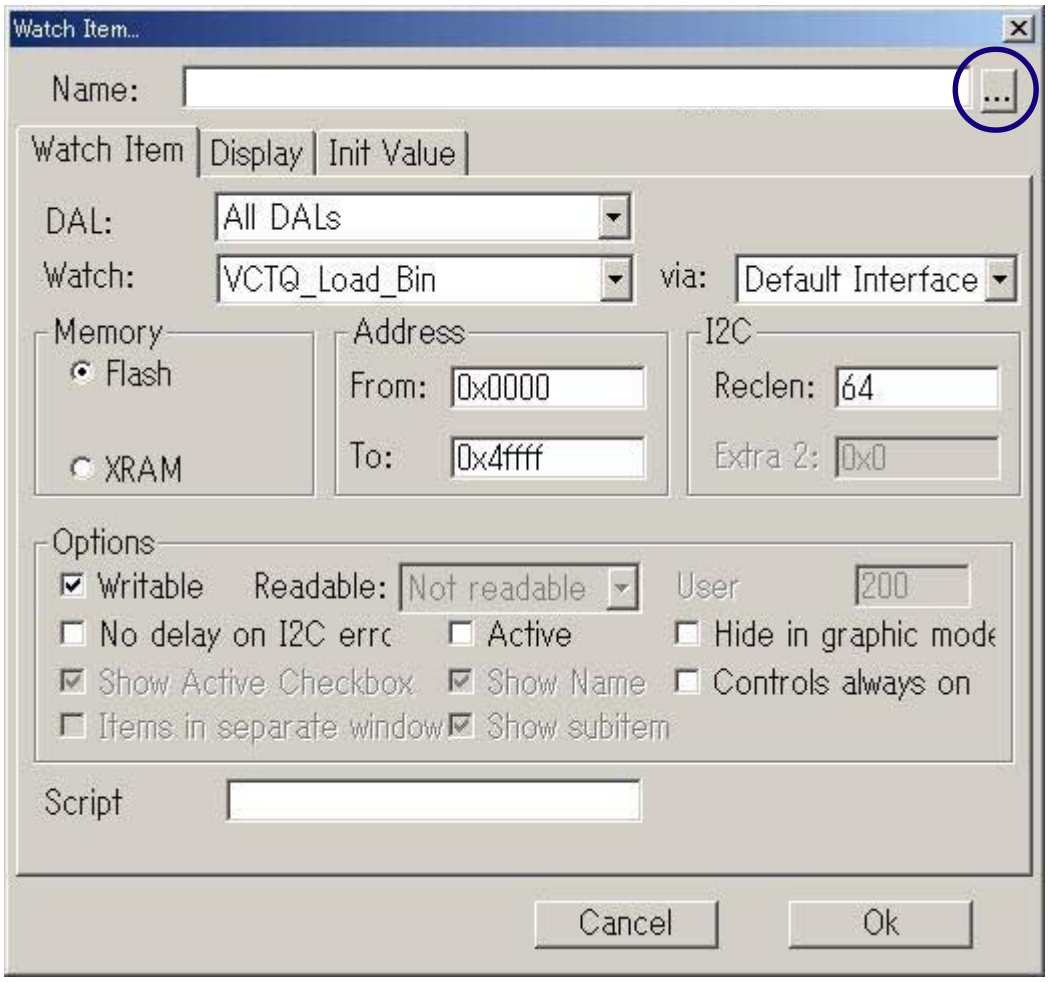


UPDATE FOR VCTP SOFTWARE

11. Press the “Erase Flash”.
    Then, press the “Load Bin -> Flash” twice.

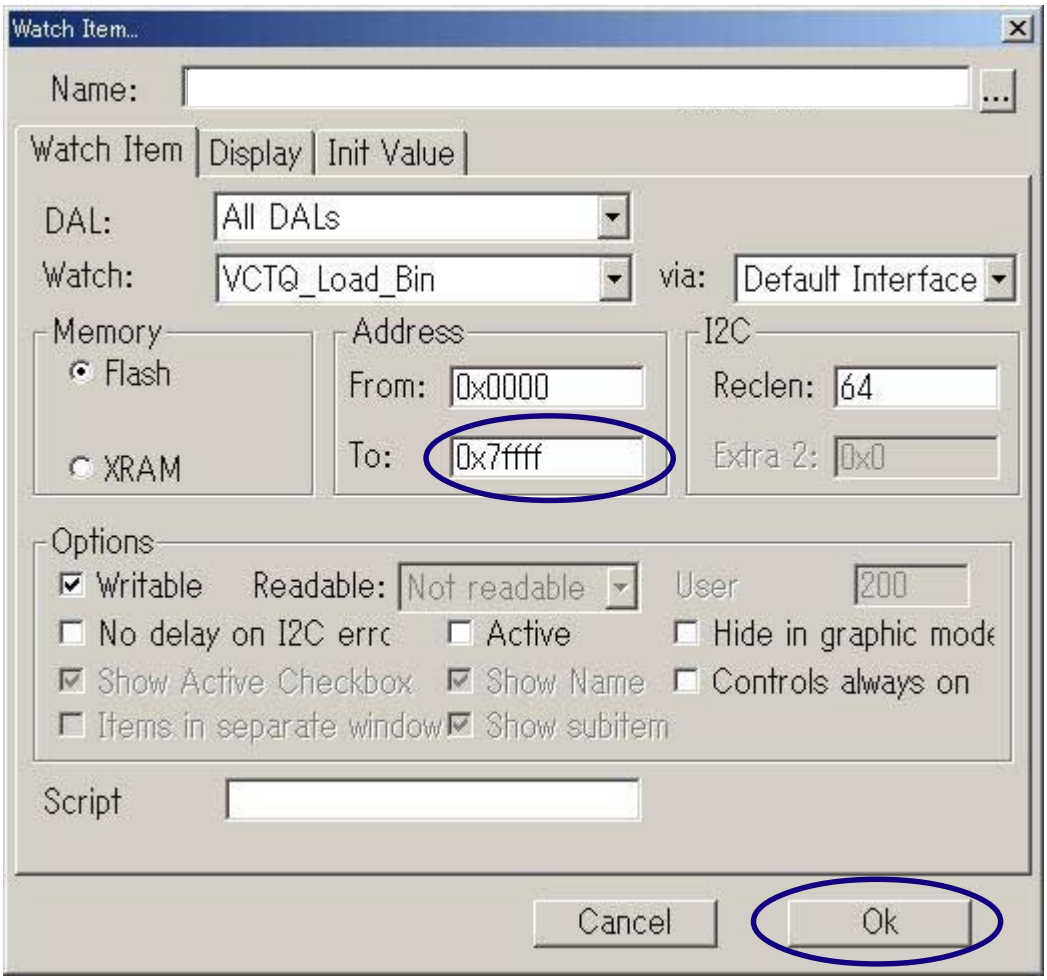


12. Press the [···], and select the writing Firmware.

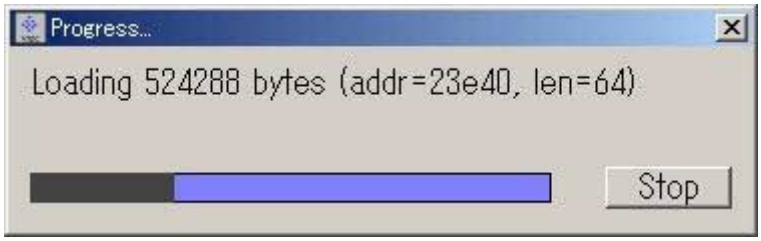


UPDATE FOR VCTP SOFTWARE

13. Select the “Address", then input the ”0x7ffff", and press the “OK”.



14. Press the “Load Bin -> Flash”.
    The following window will appear, then writing will start. After the finishing of the writing, window will close.



15. Finish the writing, unplug the AC cord, and remove the MICON PROGRAM JIG KIT 25-4 (JG203).

16. Insert the AC cord again, turn on the power.

17. Press both VOL. DOWN button on the set and Channel button (2) on the remote control for 2 seconds.

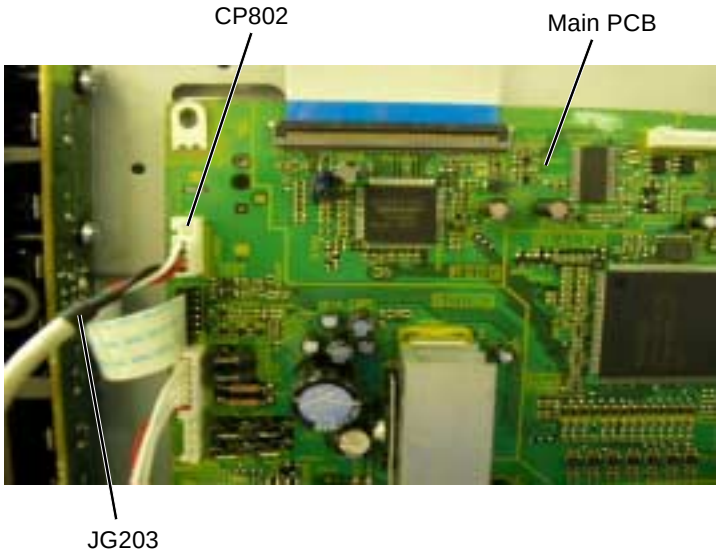
18. Confirm that displayed version agreement with writing.

UPDATE FOR EEPROM DATA

Before Update the EEPROM data, it is necessary to install the WRITING TOOLS into the PC.
For the installation of WRITING TOOLS, refer to the "INSTALL FOR WRITING TOOLS".

1. Set to the standby mode, and remove the back cabinet.

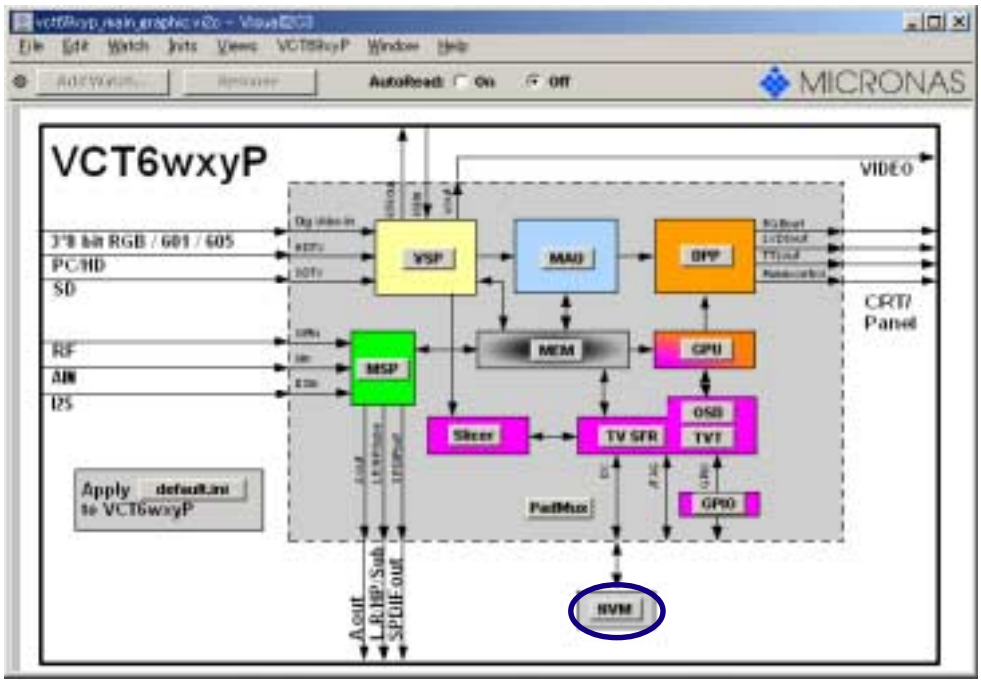
2. Using the MICON PROGRAM JIG KIT 25-4 (JG203), connect the PC Terminal and Pin 1-4 of CP802 on the Main PCB (JG203(Red line) =1 pin of CP802).



3. Set the EU LCD MICON VER UP ROM DISC (JG176) to PC.

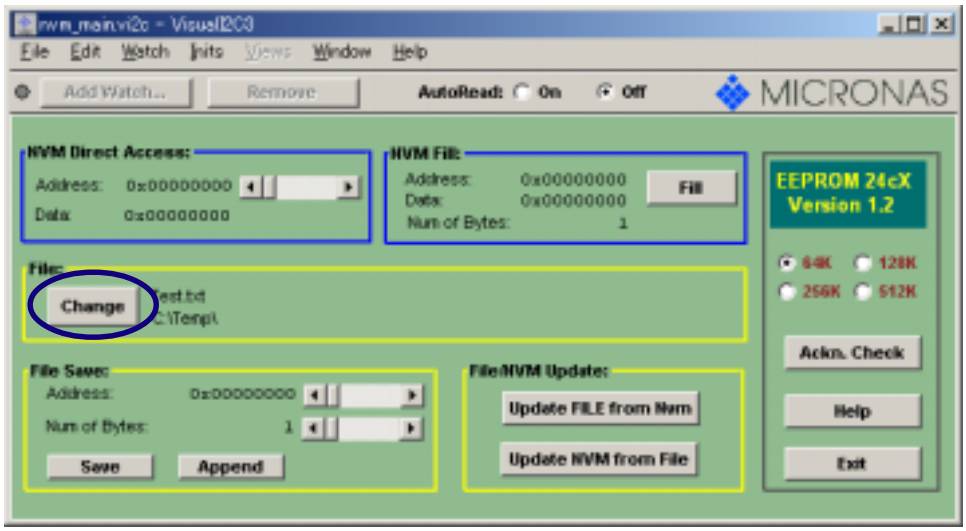
4. Start the "VCTP" (Writing Tools).

5. Press the "NVM".

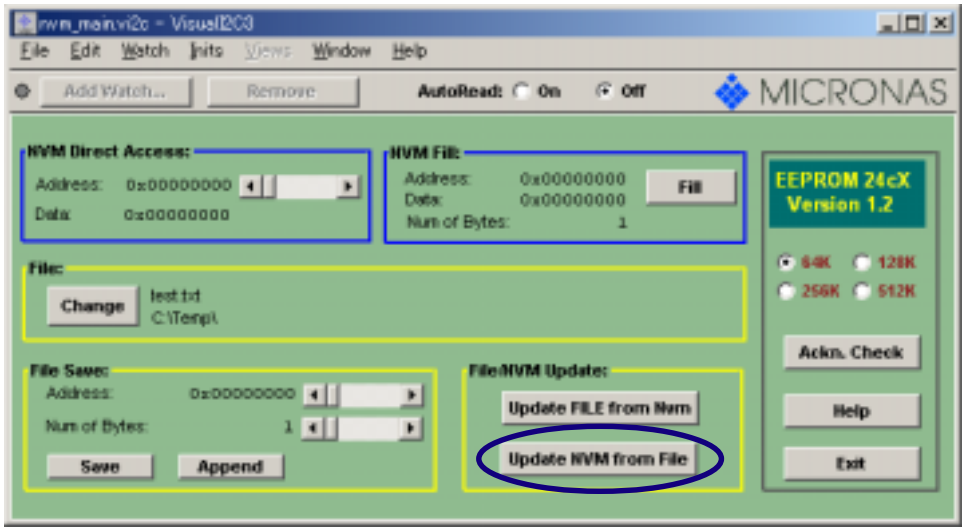


UPDATE FOR EEPROM DATA

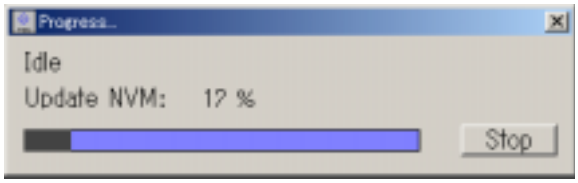
6. Press the "Change", and select the writing EEPROM data file (TEXT file).



7. Press the "Update NVM from File".



8. The following window will appear, writing will start. After the finishing of the writing, the window will close.



9. Finish the writing, unplug the AC cord, and remove the MICON PROGRAM JIG KIT 25-4 (JG203).

10. Insert the AC cord again, turn on the power.

11. Press both VOL. DOWN button on the set and Channel button (2) on the remote control for 2 seconds.

12. Confirm that displayed version agreement with writing.

ELECTRICAL ADJUSTMENTS

1. ADJUSTMENT PROCEDURE

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

- Use an isolation transformer when performing any service on this chassis.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
- When you exchange IC and Transistor with a heat sink, apply silicon grease **(YG6260M)** on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damage to the IC and Transistor).

Prepare the following measurement tools for electrical adjustments.

1. Pattern Generator

2. BASIC ADJUSTMENTS

On-Screen Display Adjustment

1. Set the VOLUME to minimum.
2. Press the VOL. DOWN button on the set and the channel button **(9)** on the remote control for more than 2 seconds to display adjustment mode on the screen as shown in **Fig. 2-1**.

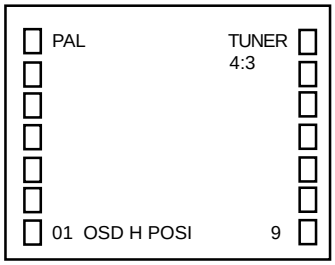


Fig. 2-1

3. Use the UP/DOWN button or Channel button **(0-9)** on the remote control to select the options shown in **Fig. 2-2**.
4. Press the MENU button on the remote control to end the adjustments.

NO.	FUNCTION	NO.	FUNCTION
01	OSD H POSI	23	H POSI MIN
02	OSD V POSI	24	V POSI
03	R DRIVE (M)	25	V POSI MAX
04	R CUTOFF (M)	26	V POSI MIN
05	G DRIVE (M)	27	BAK LIGHT CENTER
06	G CUTOFF (M)	28	BAK LIGHT MAX
07	B DRIVE (M)	29	BAK LIGHT MIN
08	B CUTOFF (M)	30	BRIGHT CENTER
09	R DRIVE (M)	31	BRIGHT MAX
10	R CUTOFF (H)	32	BRIGHT MIN
11	G DRIVE (H)	33	TINT CENTER
12	G CUTOFF (H)	34	CONTRAST CENTER
13	B DRIVE (H)	35	CONTRAST MAX
14	B CUTOFF (H)	36	CONTRAST MIN
15	R DRIVE (L)	37	CONTRAST 50
16	R CUTOFF (L)	38	COLOR CENTER
17	G DRIVE (L)	39	COLOR MAX
18	G CUTOFF (L)	40	COLOR MIN
19	B DRIVE (L)	41	TEXT H POSI
20	B CUTOFF (L)	42	TEXT V POSI
21	H POSI	43	DAC VCOM
22	H POSI MAX		

Fig. 2-2

2-1: FLICKER

1. Activate the adjustment mode display of **Fig. 2-1** and
2. press the channel button **(43)** on the remote control to select “DAC VCOM”.
3. Check if the screen is flashing.
4. If screen is flashing, press the " i+ " button on the remote control and using the LEFT/RIGHT button on the remote control to adjust the screen.

2-2: WHITE BALANCE

1. Place the set in Aging Test for more than 15 minutes.
2. Receive the gray scale pattern from the Pattern Generator.
3. Press the ⏎ button on the remote control to set to the AV mode.
4. Using the remote control, set the brightness and contrast to normal position.
5. Activate the adjustment mode display of **Fig. 2-1** and press the channel button **(03)** on the remote control to select “R DRIVE (N)”.
6. Press the UP/DOWN button on the remote control to select the “R CUTOFF (N)”, “B DRIVE (N)”, “B CUTOFF (N)”, “R DRIVE (C)”, “R CUTOFF (C)”, “B DRIVE (C)”, “B CUTOFF (C)”, “R DRIVE (W)”, “R CUTOFF (W)”, “B DRIVE (W)” and “B CUTOFF (W)”.
7. Adjust the RIGHT/LEFT button on the remote control to whiten the R CUTOFF (N), B DRIVE (N), B CUTOFF (N), R DRIVE (C), R CUTOFF (C), B DRIVE (C), B CUTOFF (C), R DRIVE (W), R CUTOFF (W), B DRIVE (W) and B CUTOFF (W) at each step tone sections equally.
8. Perform the above adjustments 5 and 6 until the white color is looked like a white.

ELECTRICAL ADJUSTMENTS

2-3: Confirmation of Fixed Value (Step No.)

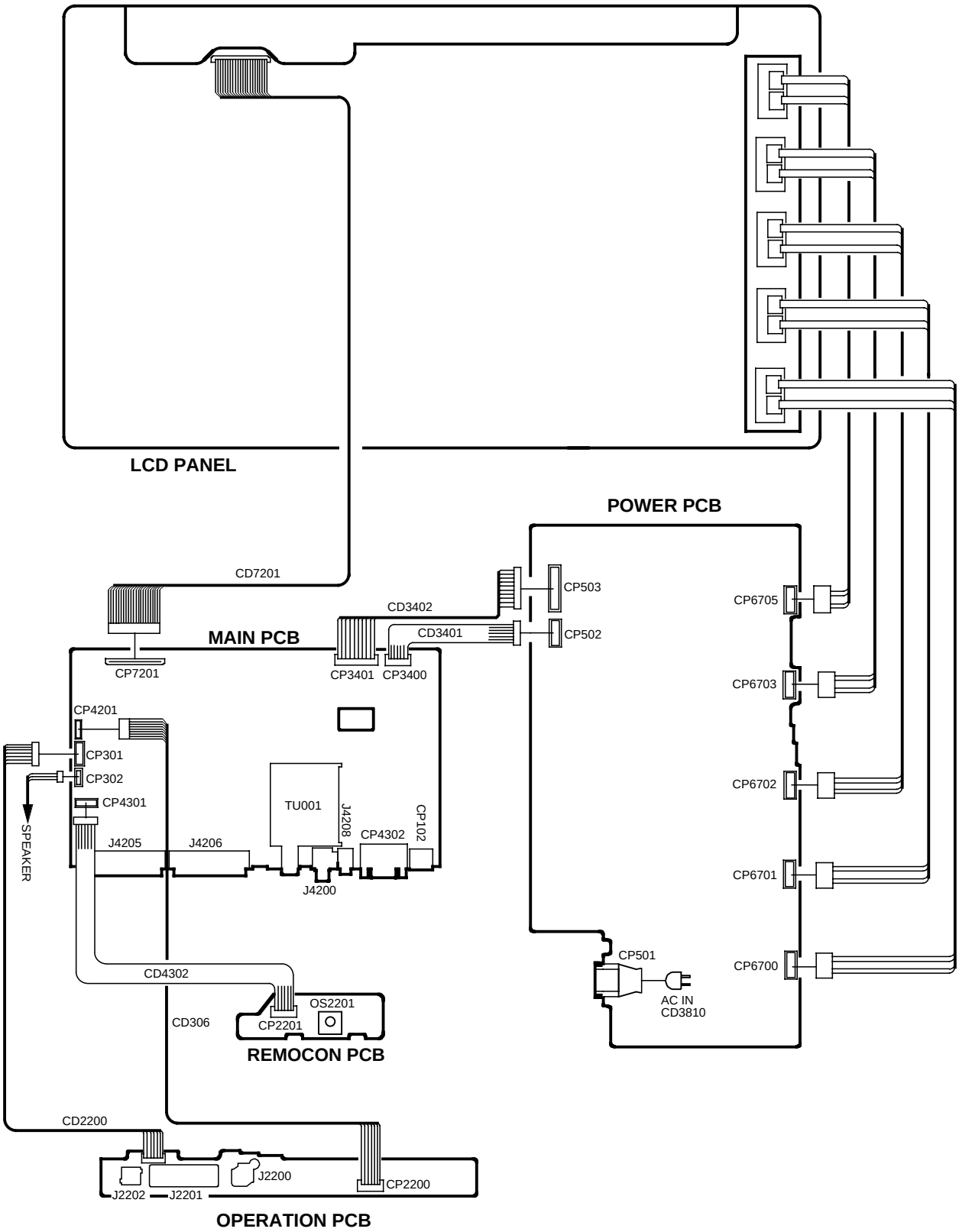
Please check if the fixed values of each of the adjustment items are set correctly referring below. **(TUNER/EXT1,EXT2(CVBS) /EXT3(CVBS) /EXT2(S(Y/C)) /EXT3(S(Y/C)) /EXT1(RGB)**

		TUNER			EXT1, EXT2					EXT3					EXT2					EXT3					EXT1				
					CVBS					CVBS					S(Y/C)					S(Y/C)					RGB				
		576i			576i			480i		576i			480i		576i			480i		576i			480i		576i			480i	
		PAL50Hz	PAL60Hz	SECAM	PAL50Hz	PAL60Hz	SECAM	NTSC3.58	NTSC4.43	PAL50Hz	PAL60Hz	SECAM	NTSC3.58	NTSC4.43	PAL50Hz	PAL60Hz	SECAM	NTSC3.58	NTSC4.43	PAL50Hz	PAL60Hz	SECAM	NTSC3.58	NTSC4.43	PAL50Hz	PAL60Hz	SECAM	NTSC3.58	NTSC4.43
NO.	FUNCTION	Step No.																											
1	OSD H POSI	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
2	OSD V POSI	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
3	R DRIVE (M)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4	R CUTOFF (M)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5	G DRIVE (M)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6	G CUTOFF (M)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7	B DRIVE (M)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8	B CUTOFF (M)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9	R DRIVE (H)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	R CUTOFF (H)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11	G DRIVE (H)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12	G CUTOFF (H)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	B DRIVE (H)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14	B CUTOFF (H)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	R DRIVE (L)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16	R CUTOFF (L)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17	G DRIVE (L)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18	G CUTOFF (L)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19	B DRIVE (L)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	B CUTOFF (L)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21	H POSI	626	626	626	626	626	626	626	626	626	626	626	626	626	626	626	626	626	626	626	626	626	626	626	626	626	626	626	626
22	H POSI MAX	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23	H POSI MIN	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24	V POSI	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
25	V POSI MAX	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
26	V POSI MIN	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27	BAK LIGHT CENTER	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117
28	BAK LIGHT MAX	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230
29	BAK LIGHT MIN	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
30	BRIGHT CENTER	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
31	BRIGHT MAX	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
32	BRIGHT MIN	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100
33	TINT CENTER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	CONTRAST CENTER	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
35	CONTRAST MAX	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
36	CONTRAST MIN	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
37	CONTRAST 50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
38	COLOR CENTTER	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
39	COLOR MAX	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63
40	COLOR MIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	TEXT H POSI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	TEXT V POSI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	DAC VCOM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

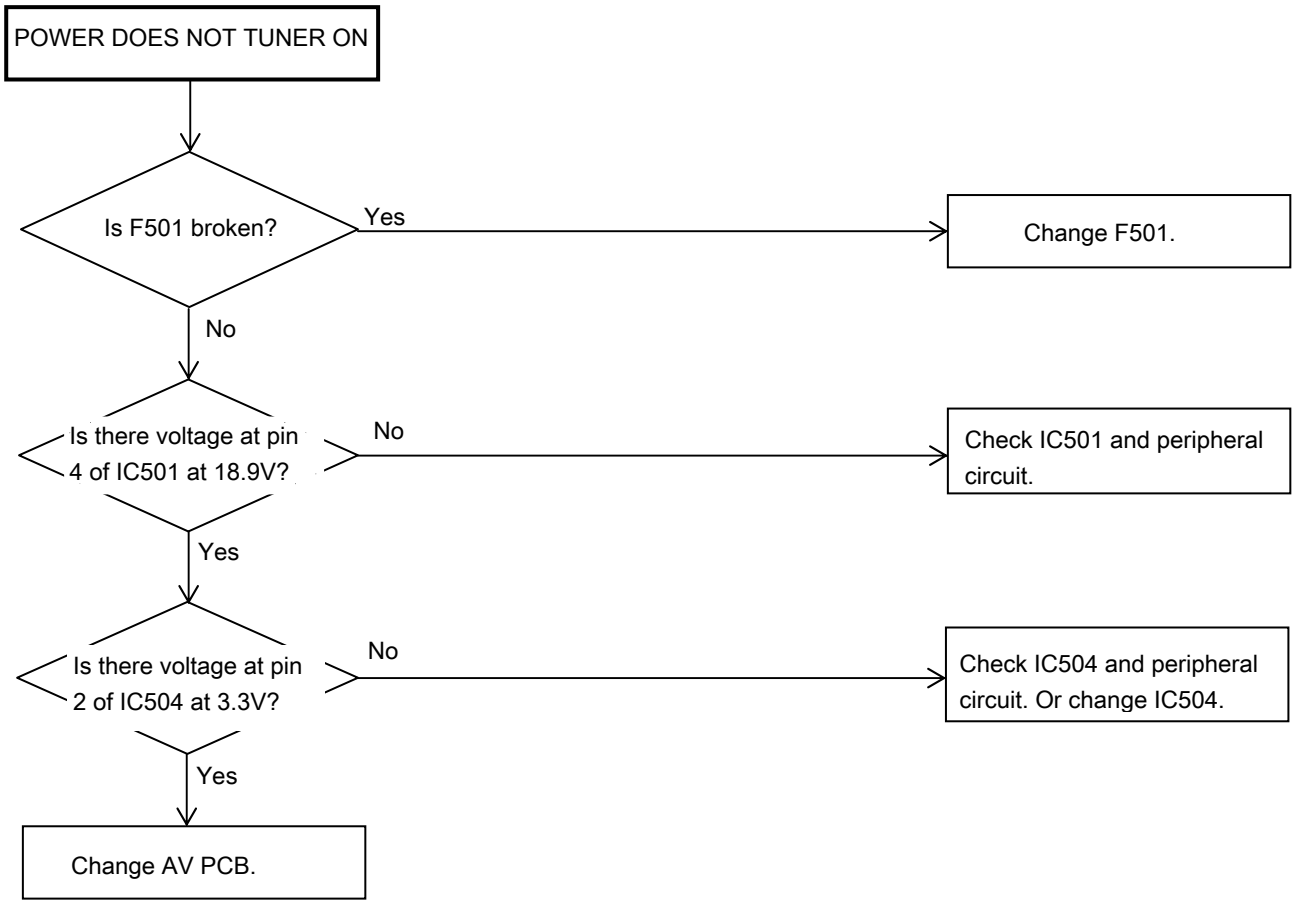
NOTE: For the st For the step no. with * mark, please adjust it according to the situation of the set.

ELECTRICAL ADJUSTMENTS

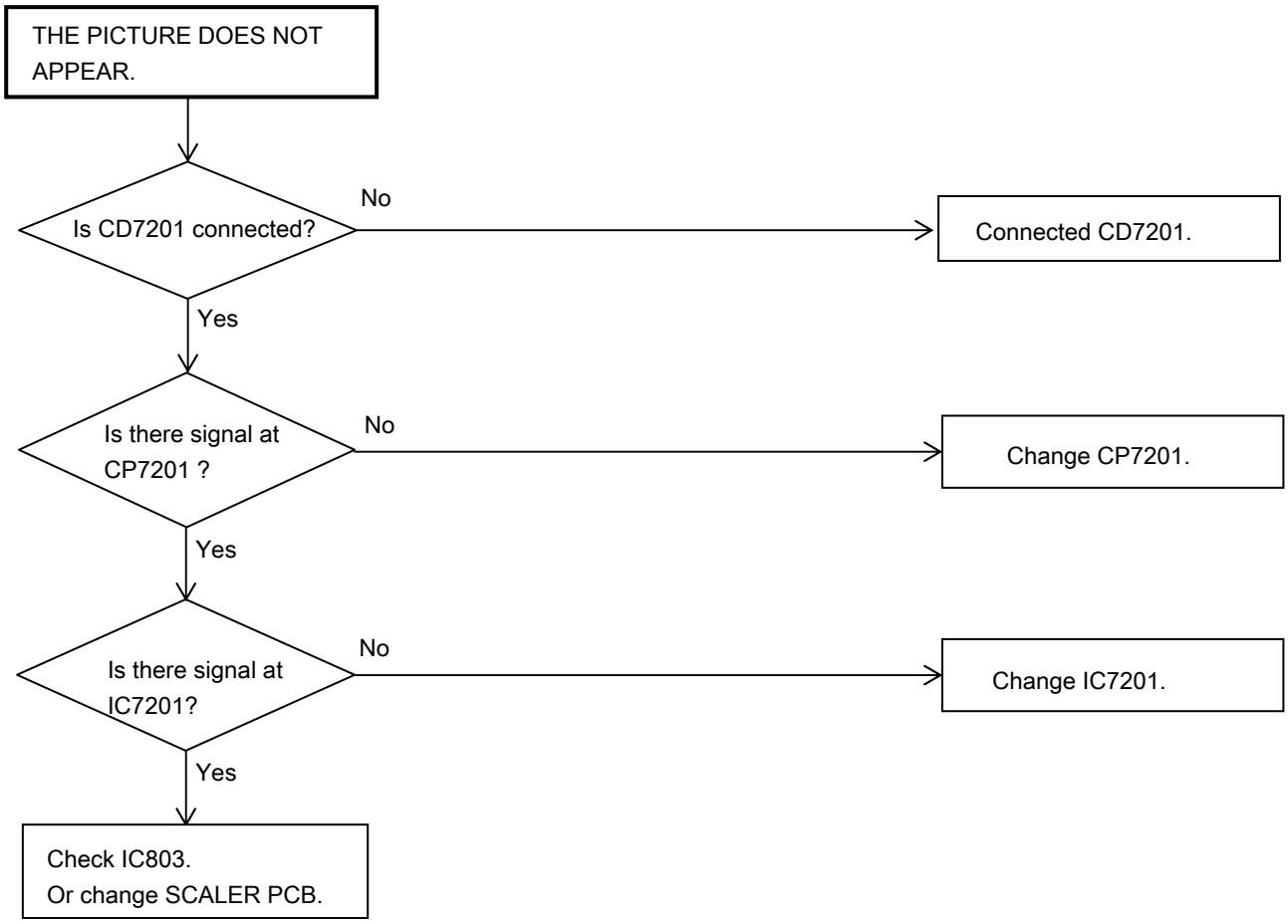
3. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



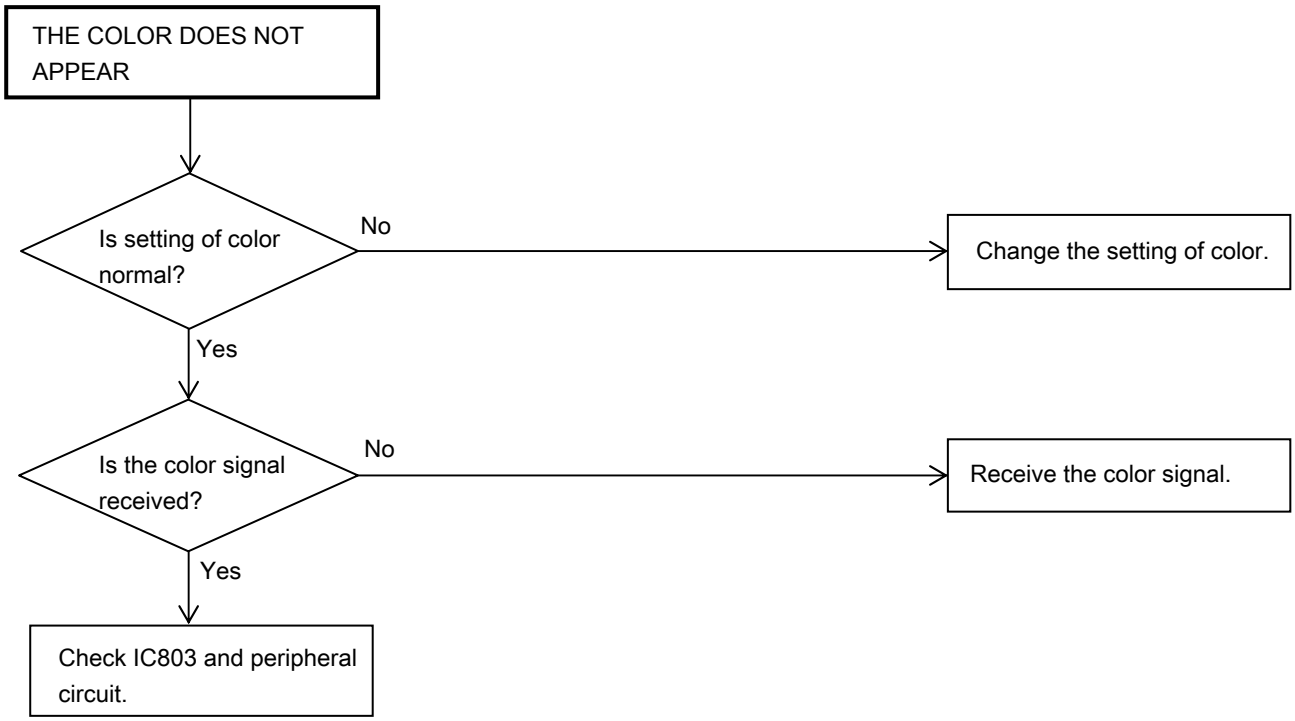
TROUBLESHOOTING GUIDE



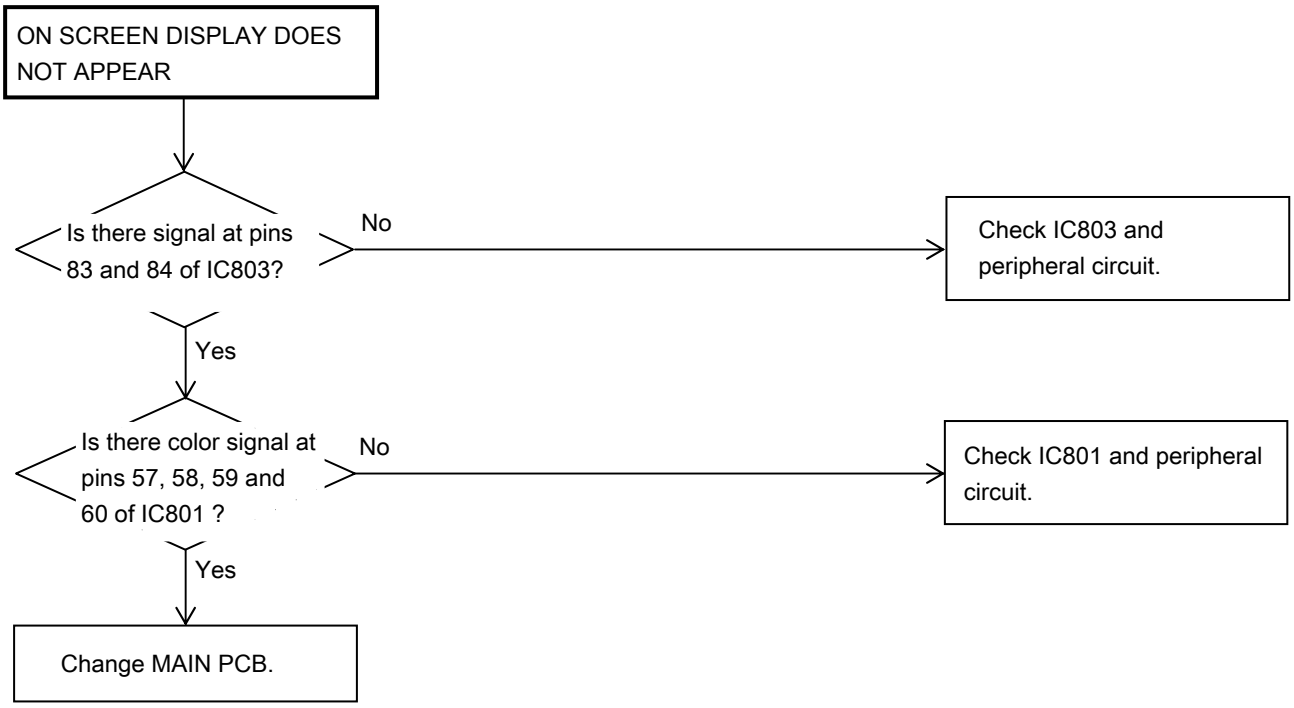
TROUBLESHOOTING GUIDE



TROUBLESHOOTING GUIDE



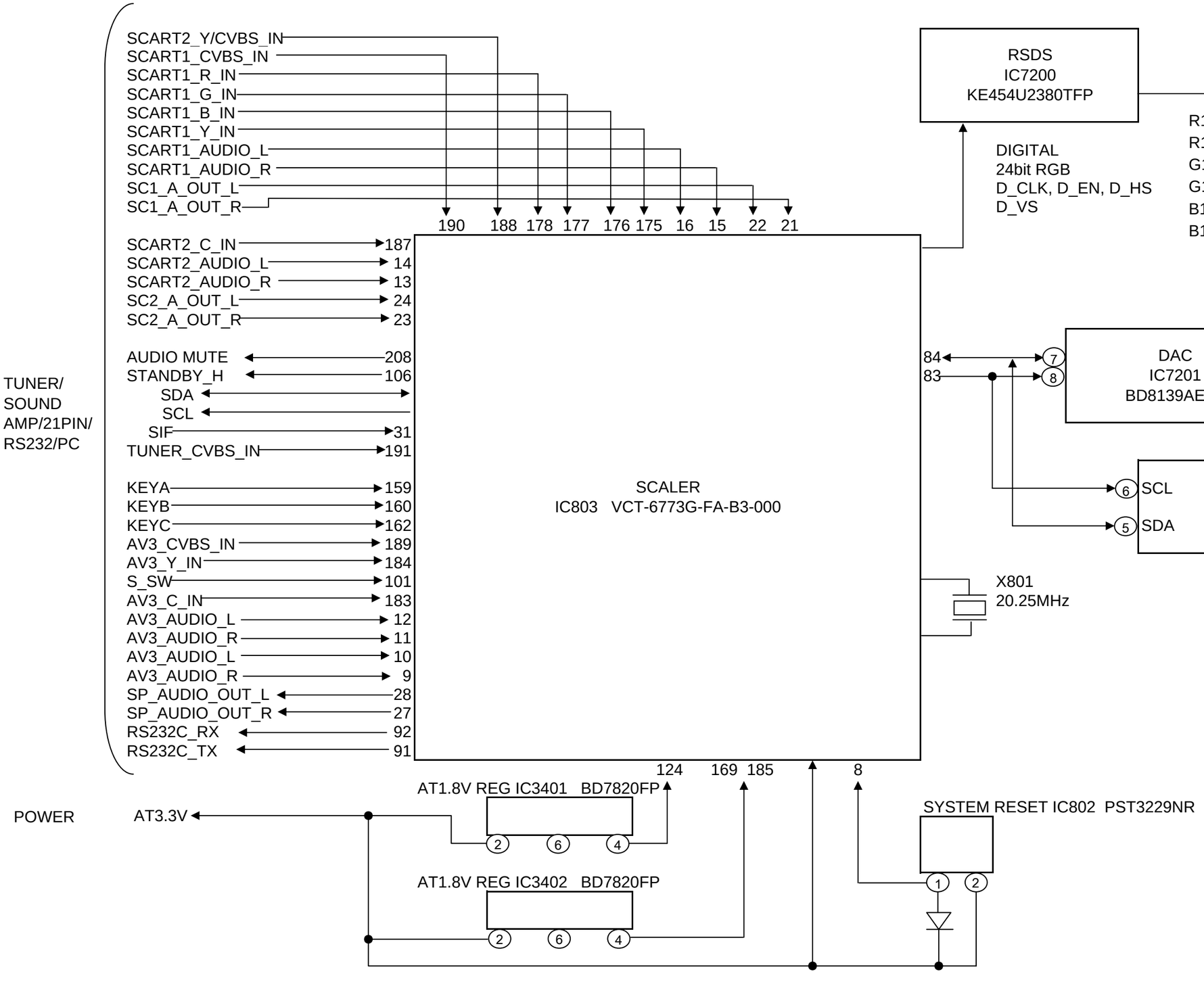
TROUBLSHOOTING GUIDDE


ON SCREEN DISPLAY DOES NOT APPEAR
Is there signal at pins 83 and 84 of IC803?
No
Check IC803 and peripheral circuit.
Yes
Is there color signal at pins 57, 58, 59 and 60 of IC801 ?
No
Check IC801 and peripheral circuit.
Yes
Change MAIN PCB.

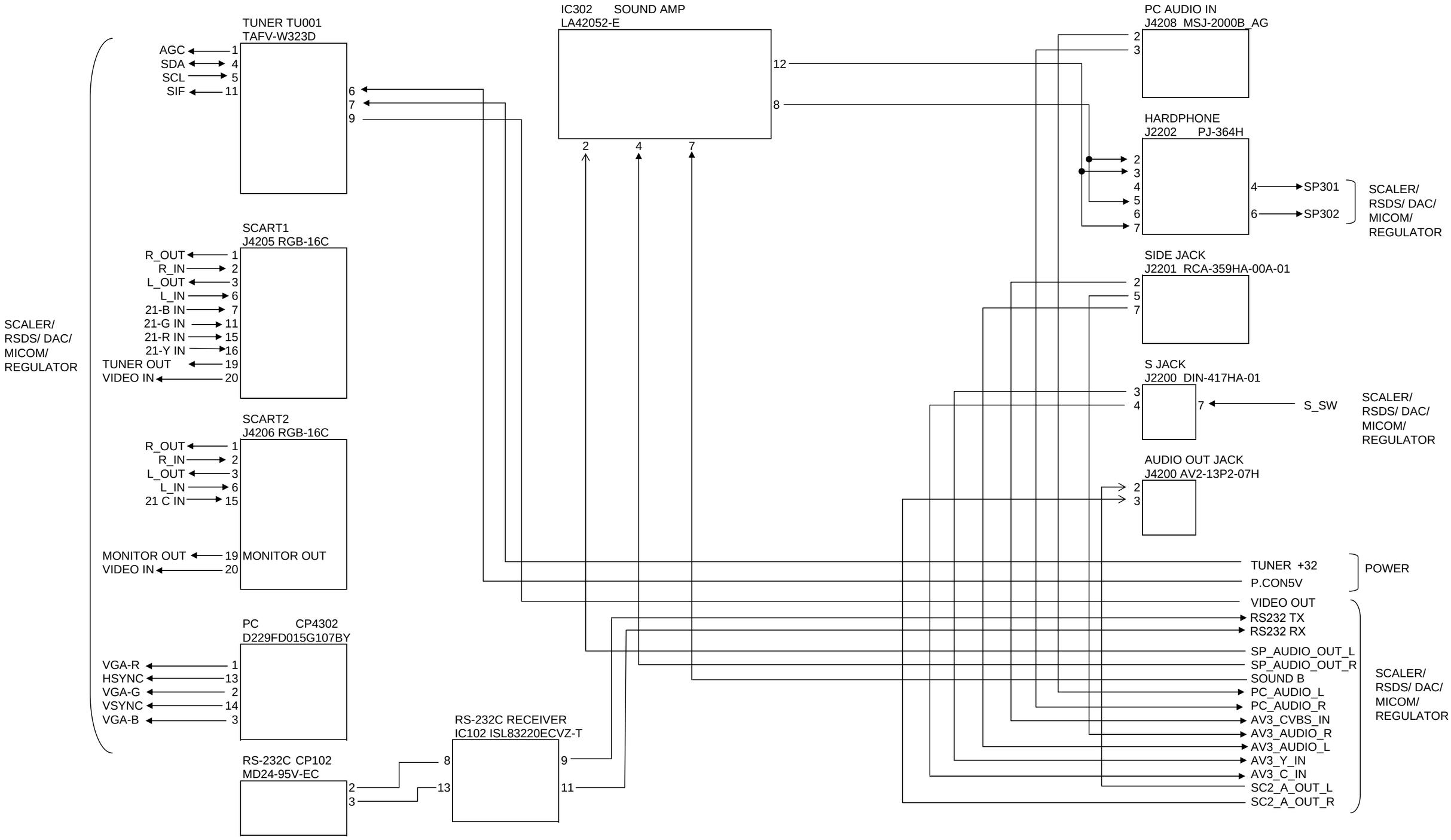
TROUBLESHOOTING GUIDE

THE SCREEN HAS A VERTICAL LINE OR A HORIZONTAL LINE.
Is there a normal waveform at pins 118, 119 and122 of IC803?
No
Change IC803.
Yes
Change V2301.

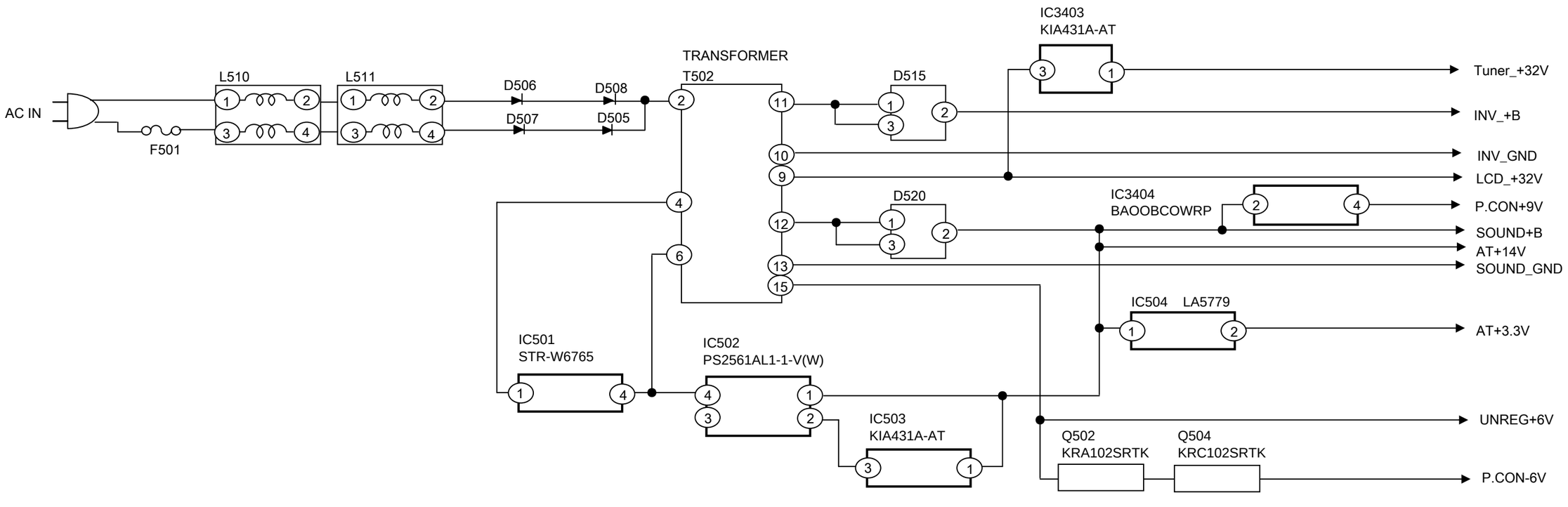
SCALER/RSDS/DAC/MICOM/REGULATOR BLOCK DIAGRAM



TUNER/SOUND AMP/21PIN/RS232/PC BLOCK DIAGRAM

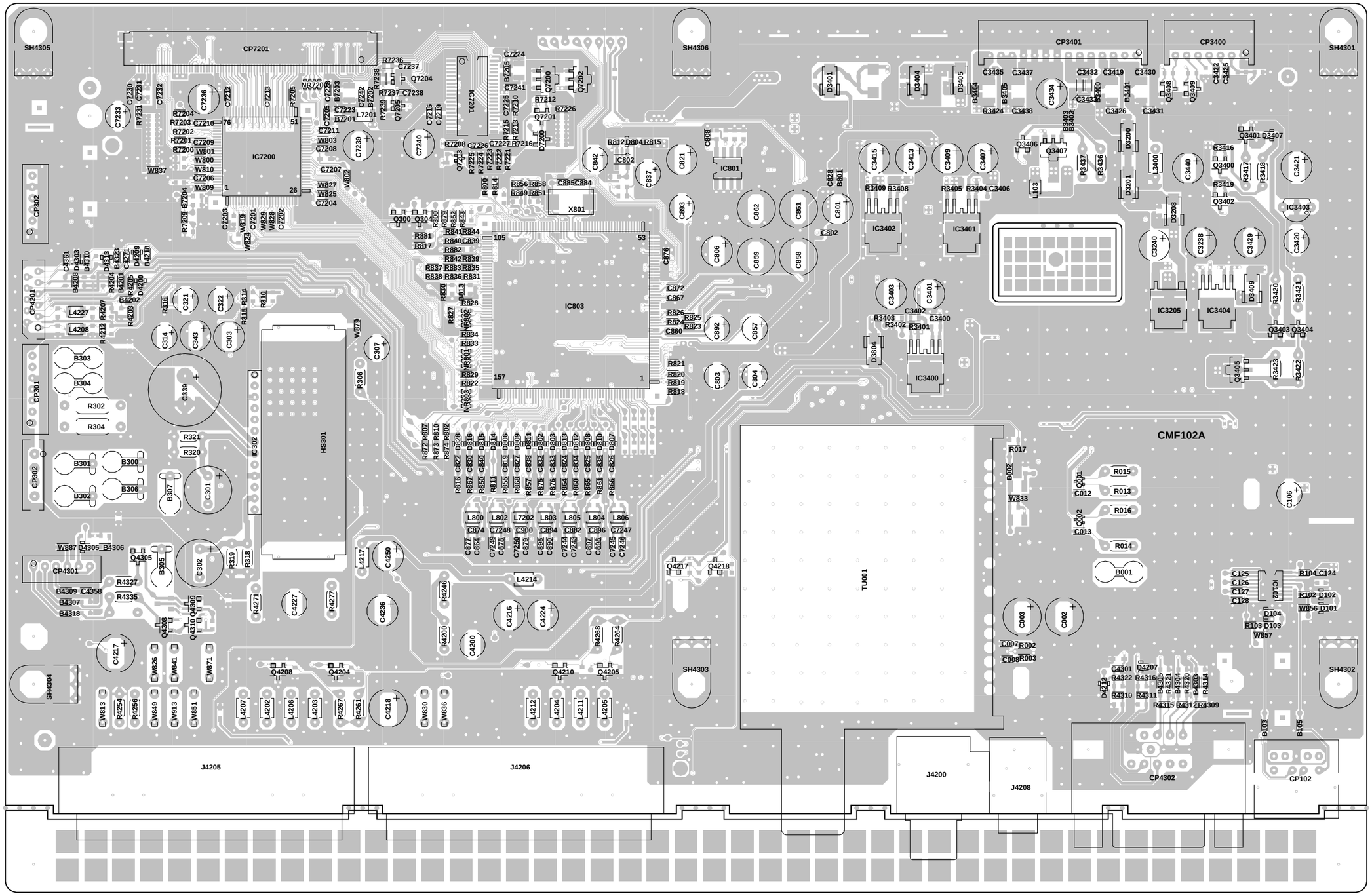


POWER BLOCK DIAGRAM



PRINTED CIRCUIT BOARDS

MAIN (TOP SIDE)

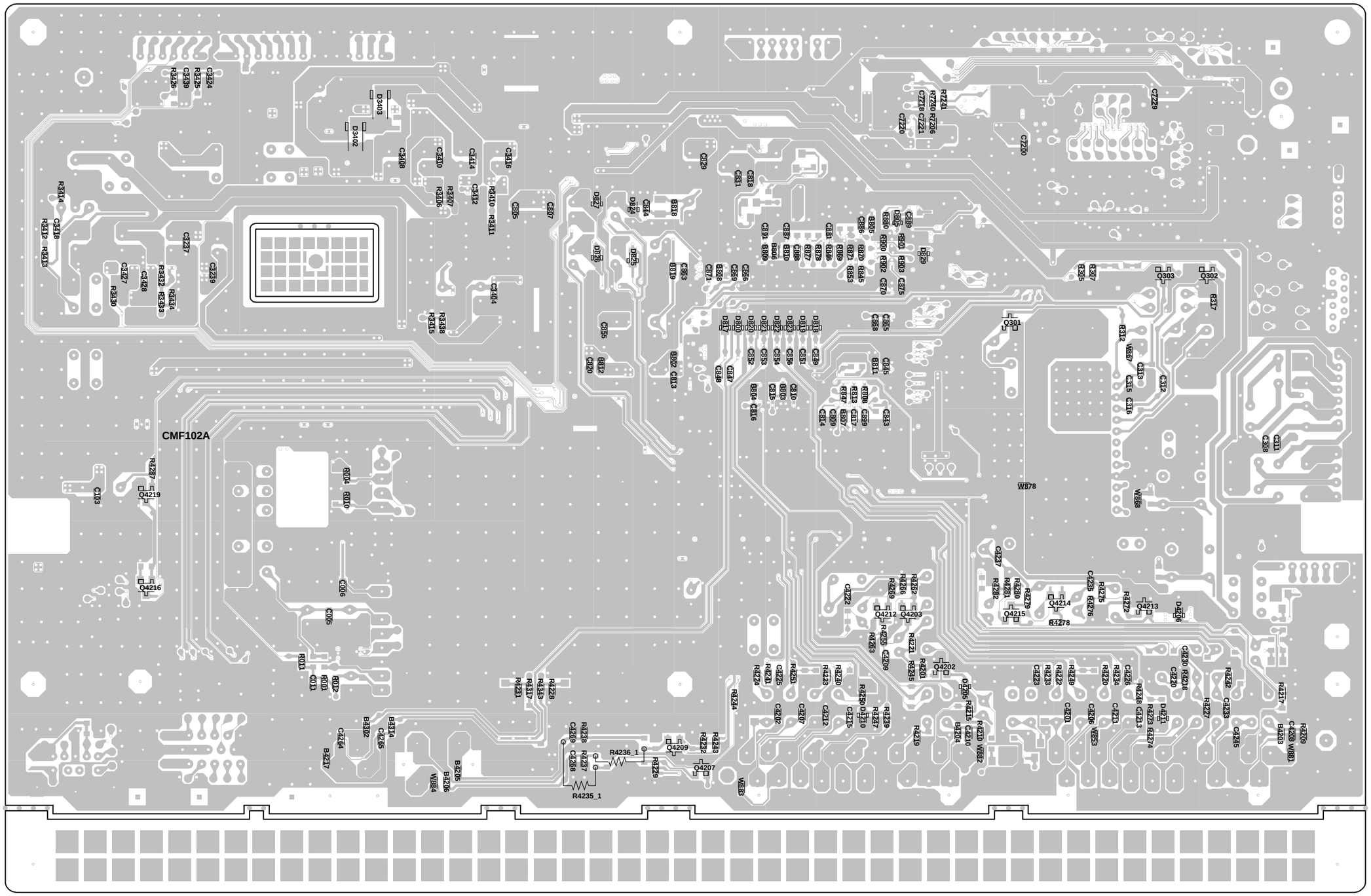


G-1

G-2

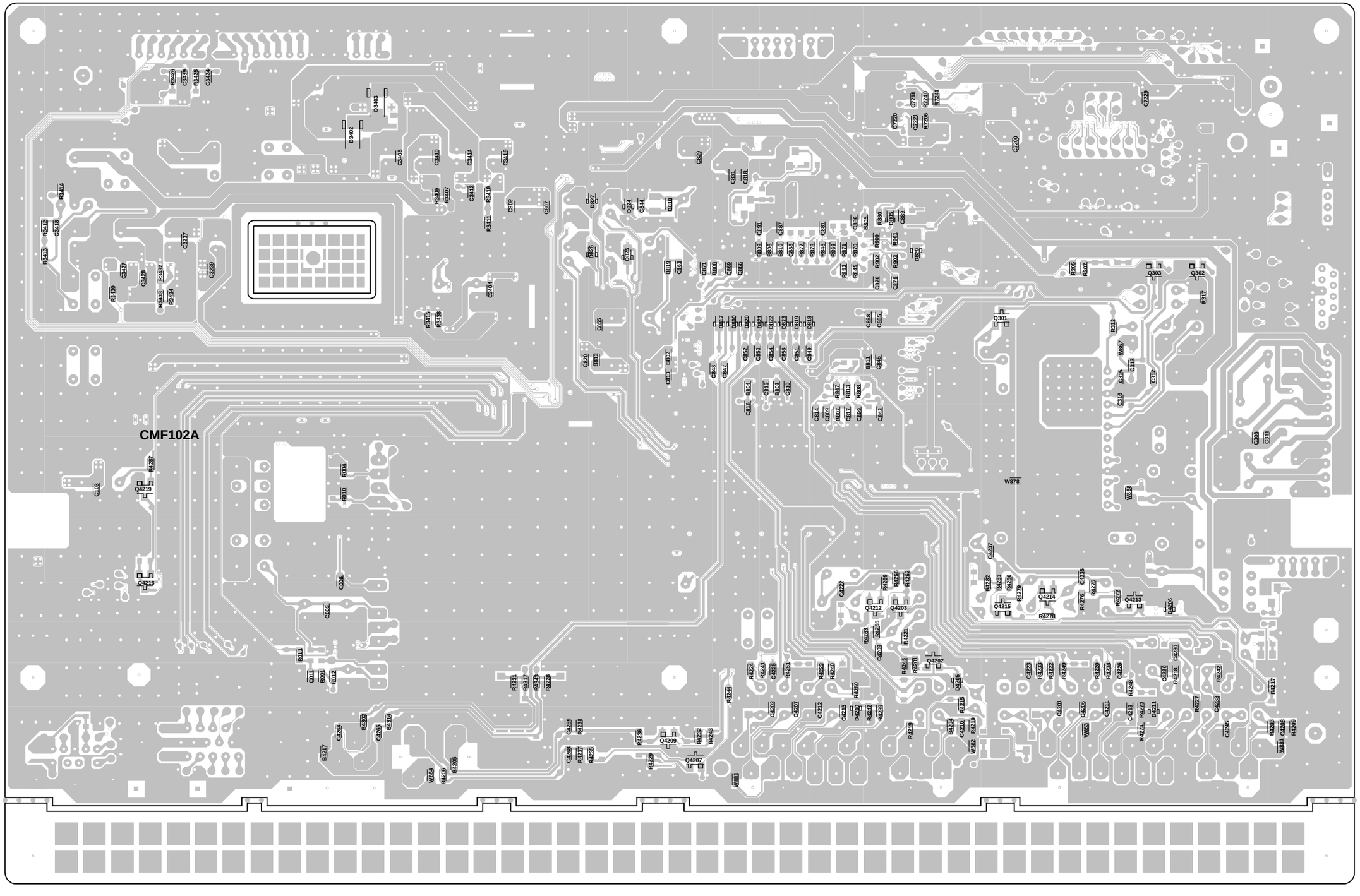
PRINTED CIRCUIT BOARDS

MAIN (BOTTOM SIDE)

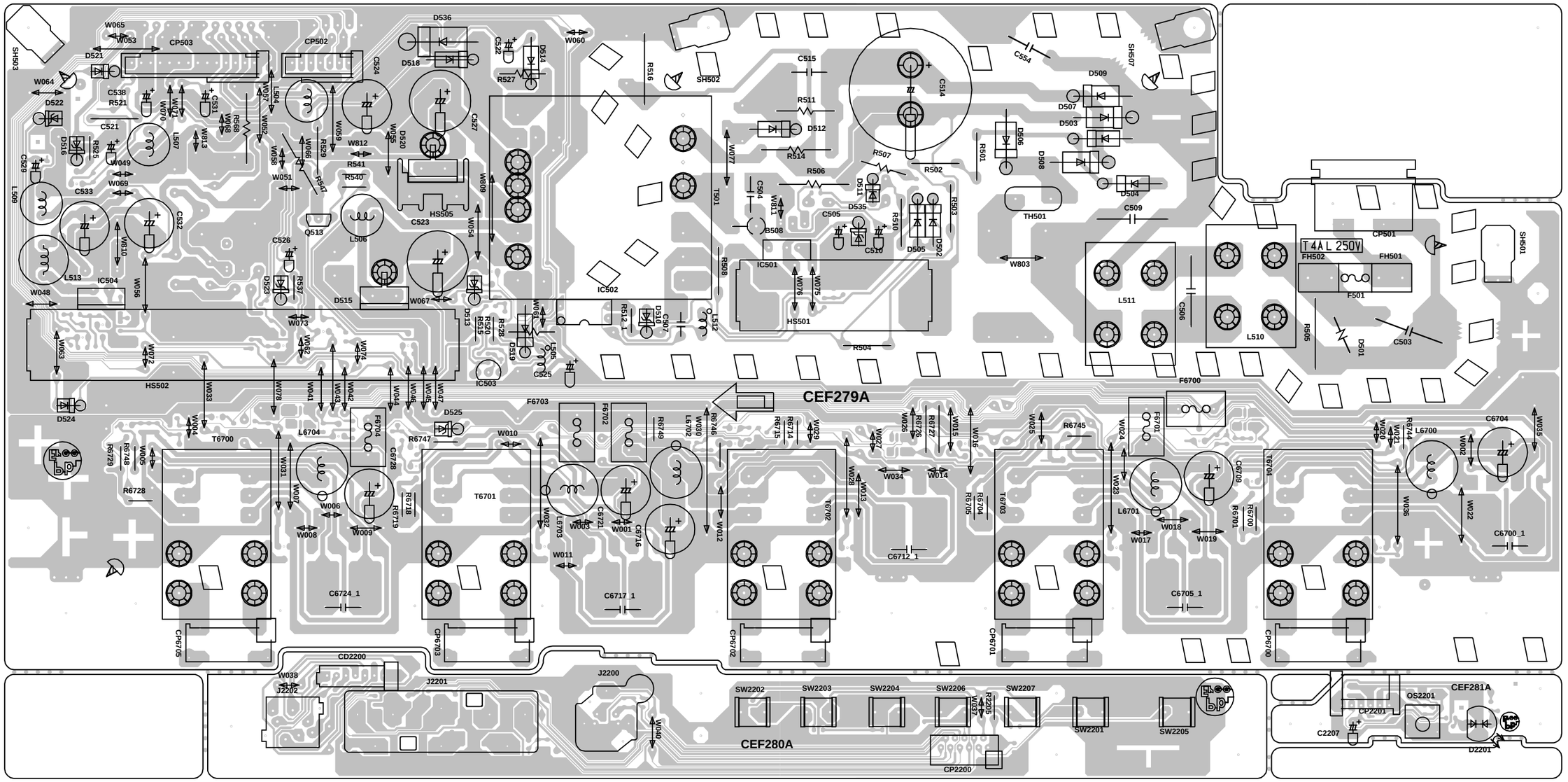


PRINTED CIRCUIT BOARDS

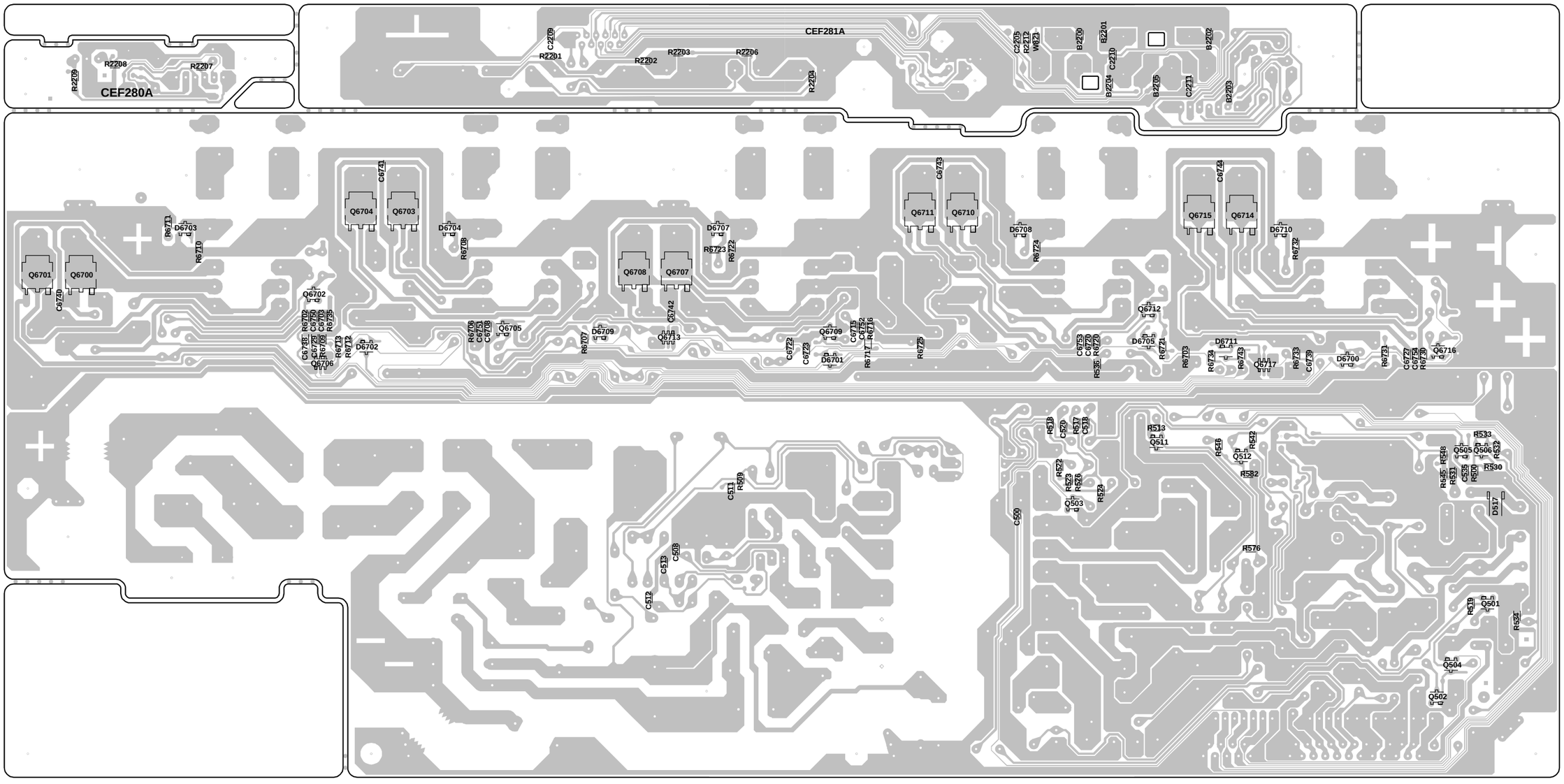
MAIN (BOTTOM SIDE)



PRINTED CIRCUIT BOARDS
POWER/OPERATION/REMOCON (INSERTED PARTS)
SOLDER SIDE

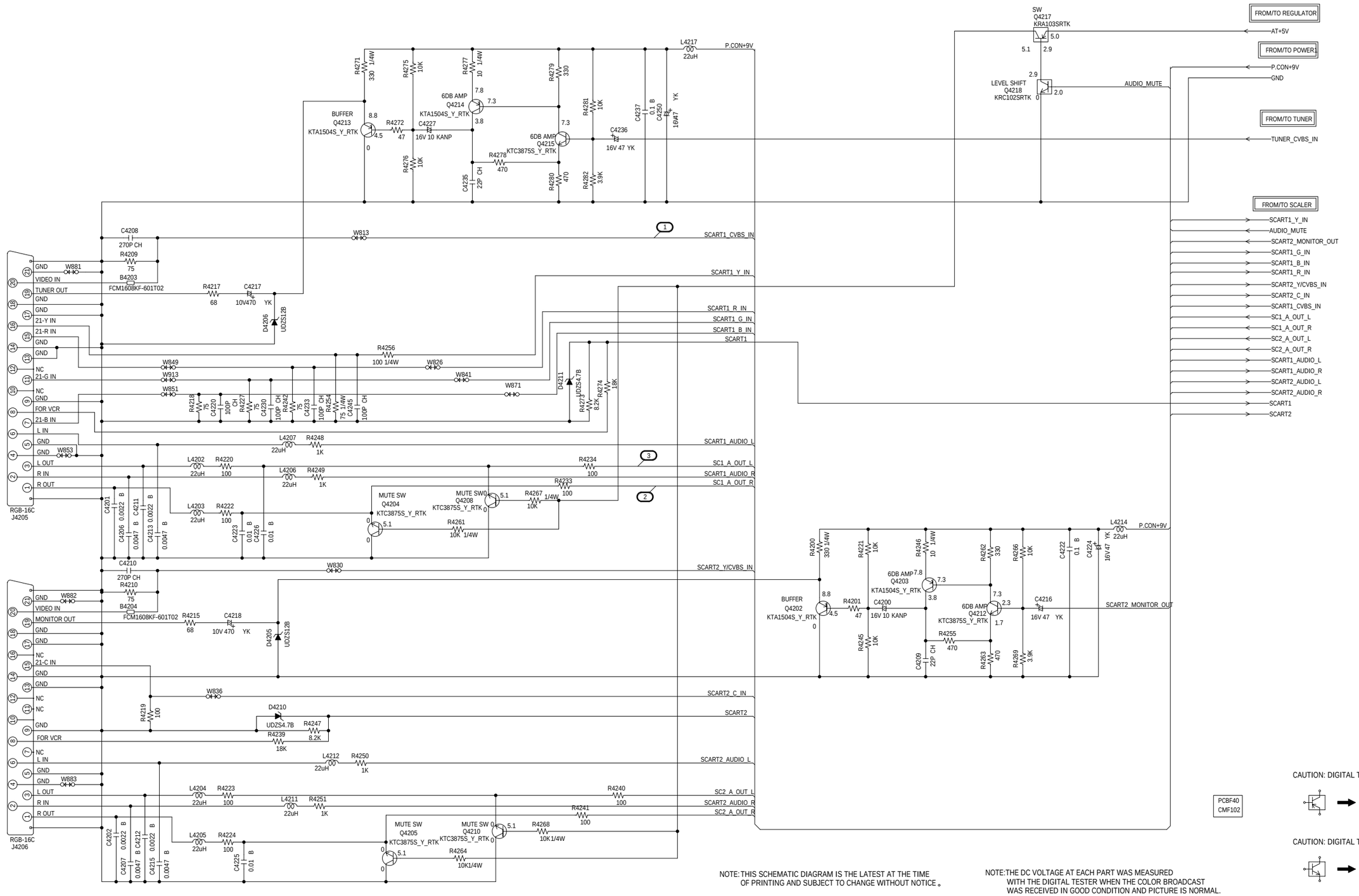

CEF279A
CEF280A
CEF281A
T4AL 250V
SH503
SH502
SH501
SH507
CP503
CP502
CP501
D536
D518
D521
D522
D516
D514
D527
D512
D511
D535
D505
D502
D509
D507
D503
D504
D506
D508
D501
D524
D525
D523
D515
D513
D519
D520
D517
D510
D2201
C538
C521
C529
C533
C532
C531
C524
C522
C527
C523
C526
C554
C515
C514
C504
C505
C509
C510
C506
C503
C507
C2207
R521
R525
R529
R541
R540
R537
R527
R516
R511
R514
R507
R506
R502
R501
R503
R510
R504
R508
R512_1
R505
W065
W053
W064
W049
W069
W070
W071
W068
W067
W066
W058
W059
W812
W051
W054
W809
W060
W077
W811
W803
W076
W075
W073
W082
W074
W063
W072
W033
W078
W041
W042
W043
W044
W046
W045
W047
W048
W056
W810
W813
W052
W057
W055
W061
W062
W808
W807
W806
W805
W804
W802
W801
W800
W801_1
W801_2
W801_3
W801_4
W801_5
W801_6
W801_7
W801_8
W801_9
W801_10
W801_11
W801_12
W801_13
W801_14
W801_15
W801_16
W801_17
W801_18
W801_19
W801_20
W801_21
W801_22
W801_23
W801_24
W801_25
W801_26
W801_27
W801_28
W801_29
W801_30
W801_31
W801_32
W801_33
W801_34
W801_35
W801_36
W801_37
W801_38
W801_39
W801_40

PRINTED CIRCUIT BOARDS
POWER/OPERATION/REMOCON(CHIP MOUNTED PARTS)
SOLDER SIDE



21PIN SCHEMATIC DIAGRAM

(MAIN PCB)

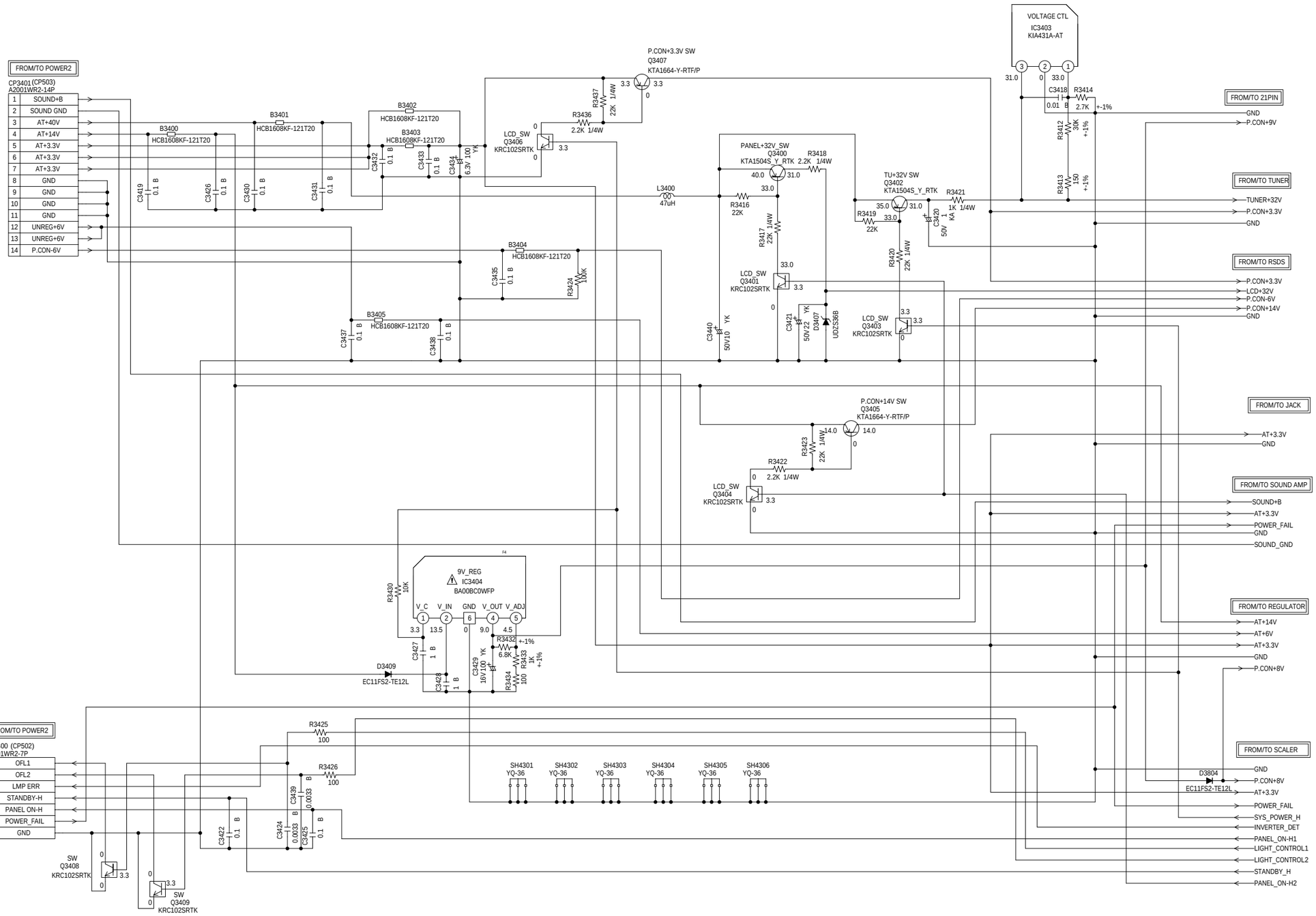


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

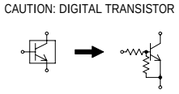
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

POWER1 SCHEMATIC DIAGRAM

(MAIN PCB)



CAUTION: DIGITAL TRANSISTOR



CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION :LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

PCBF40
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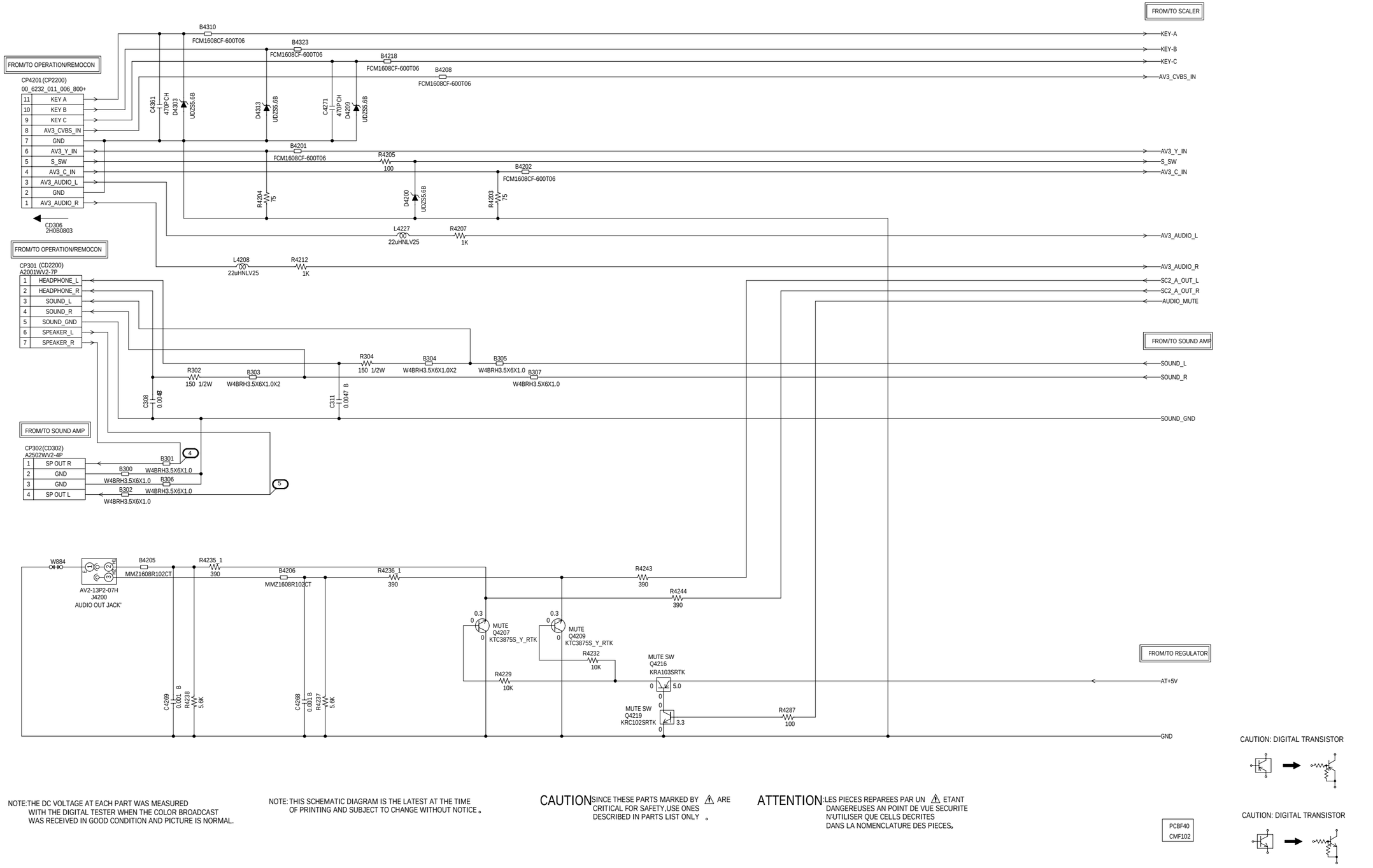
AV JACK / SWITCH SCHEMATIC DIAGRAM

(MAIN PCB)



NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

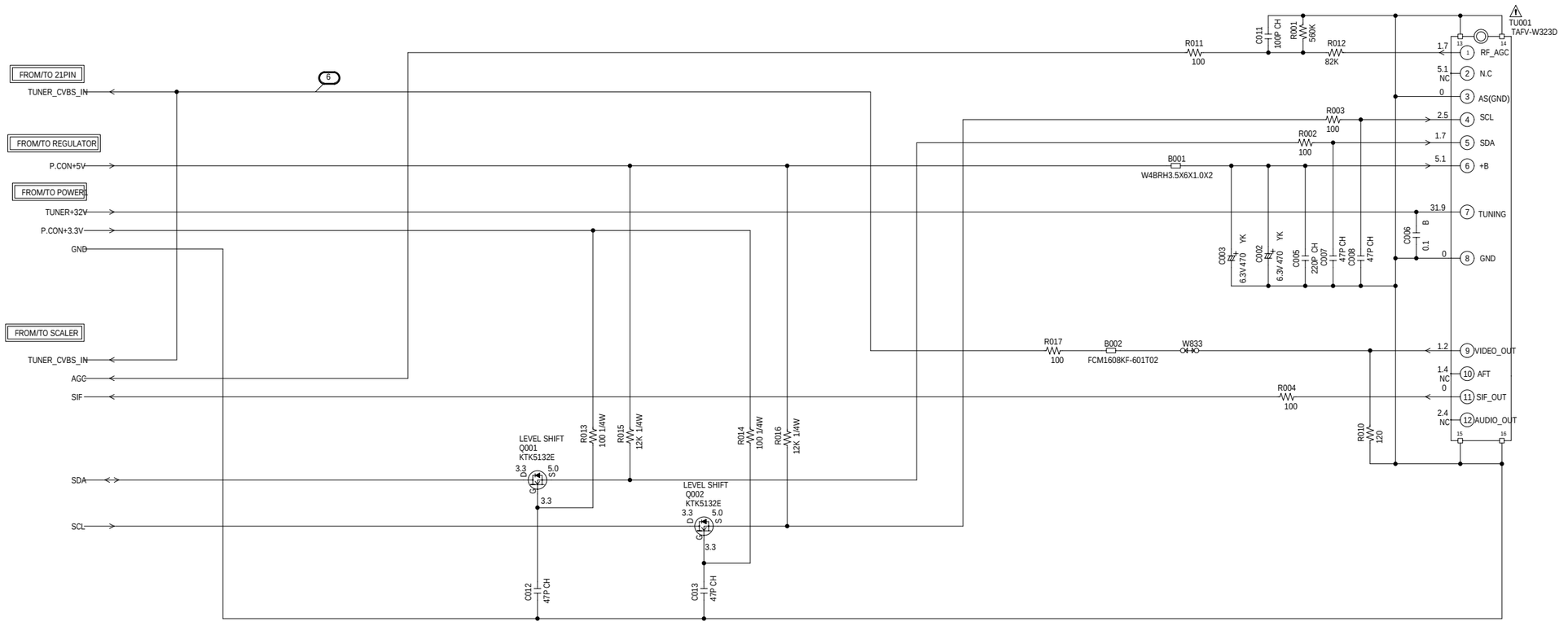
CAUTION:SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION:LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

PCBF40
CMF102

TUNER SCHEMATIC DIAGRAM

(MAIN PCB)



NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION :LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

PCBF40
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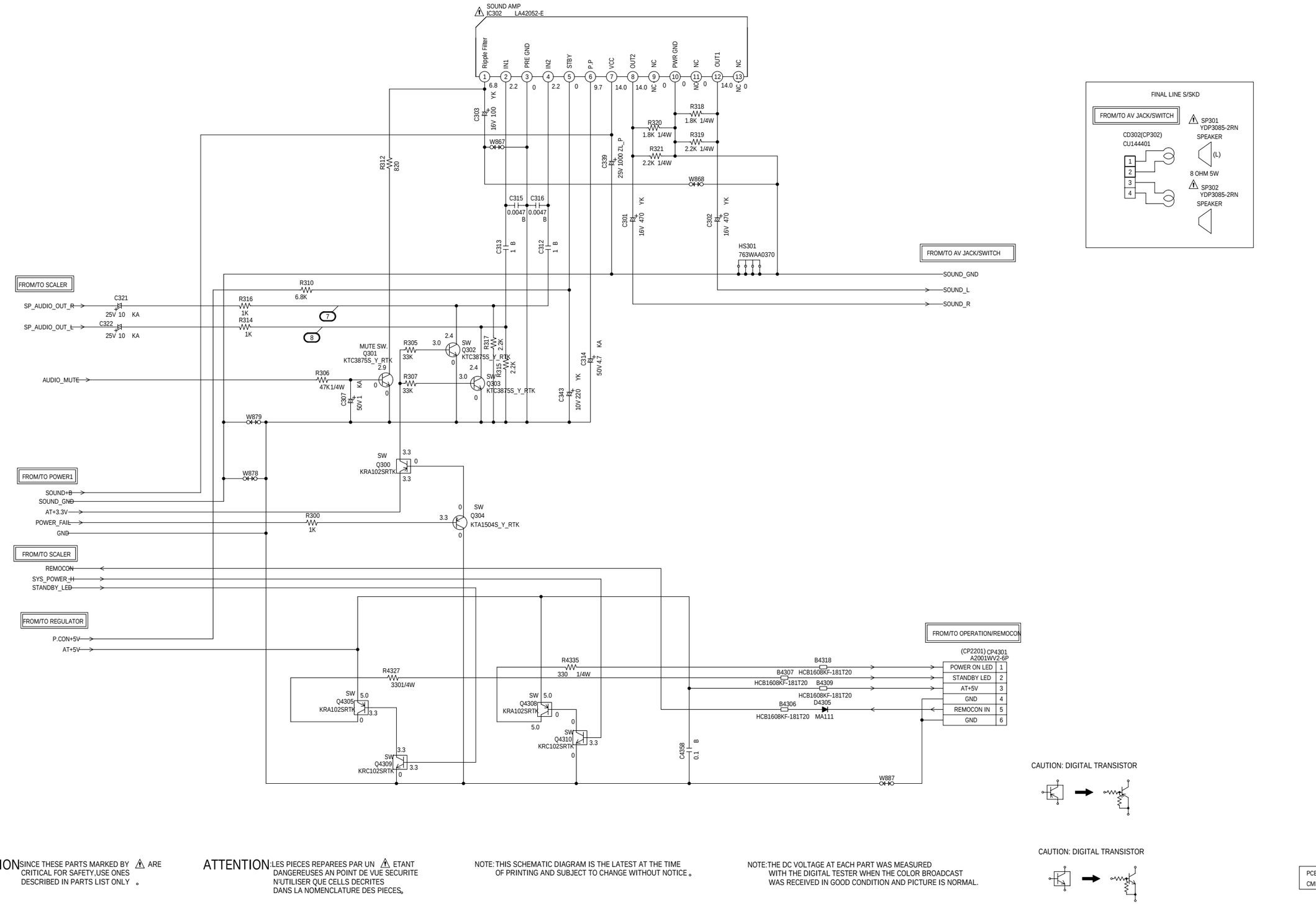
SOUND AMP SCHEMATIC DIAGRAM

(MAIN PCB)



CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION :LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

PCBF40
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SCALER SCHEMATIC DIAGRAM

(MAIN PCB)

FROM/TO REGULATOR

FROM/TO POWER1

FROM/TO SOUND AMP

FROM/TO TUNER

FROM/TO 21PIN

FROM/TO AV JACK/SWITCH

FROM/TO JACK

FROM/TO RSDS

SCALER/MIOCN
IC803
VCT-6773G-FA-B3-000

IC801 AT24C256BN-10SU-1.8
EEP ROM IC 256K

RESET IC
IC802 PST3229NR

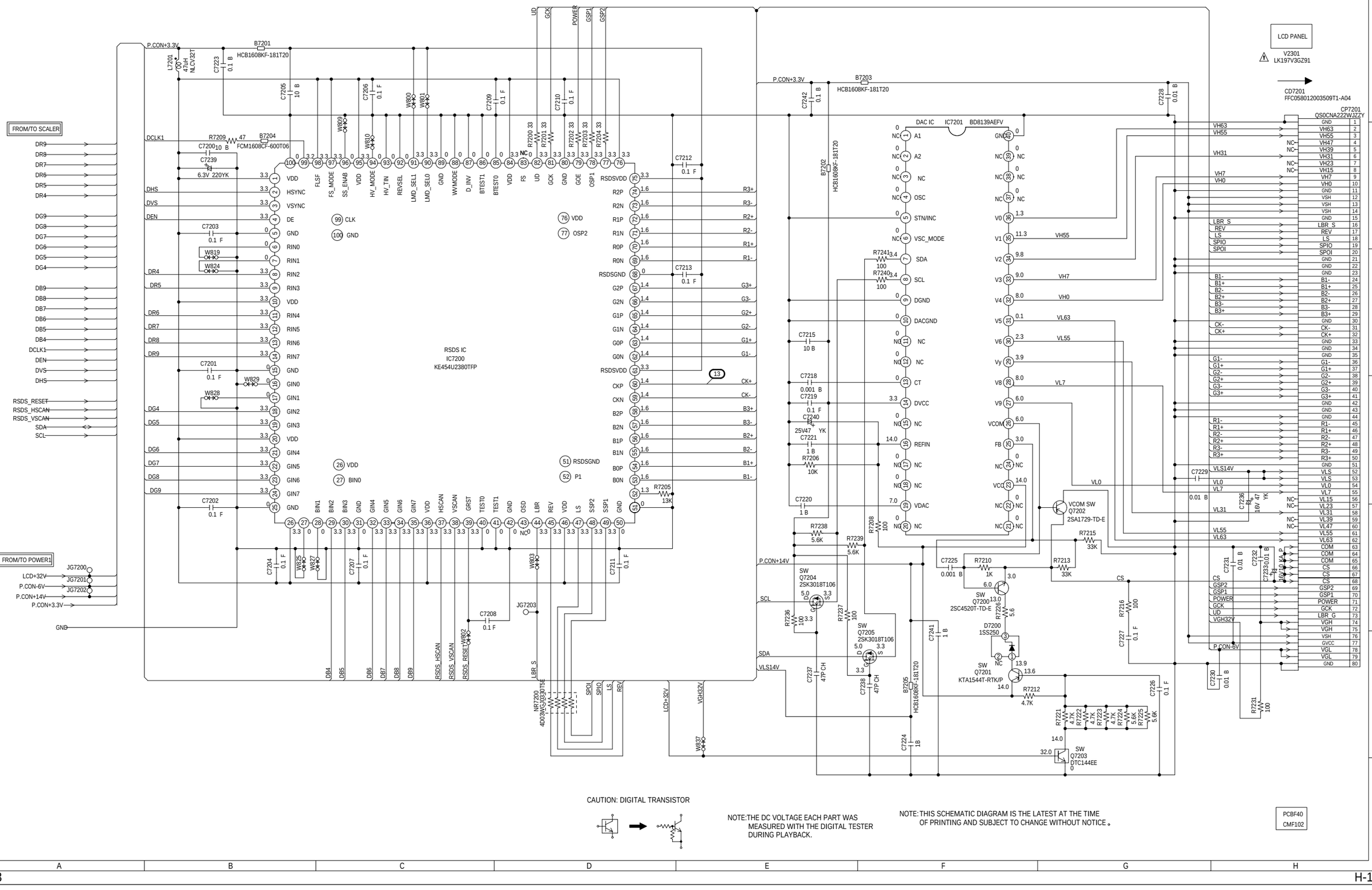
NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

PCBF40
CMF102

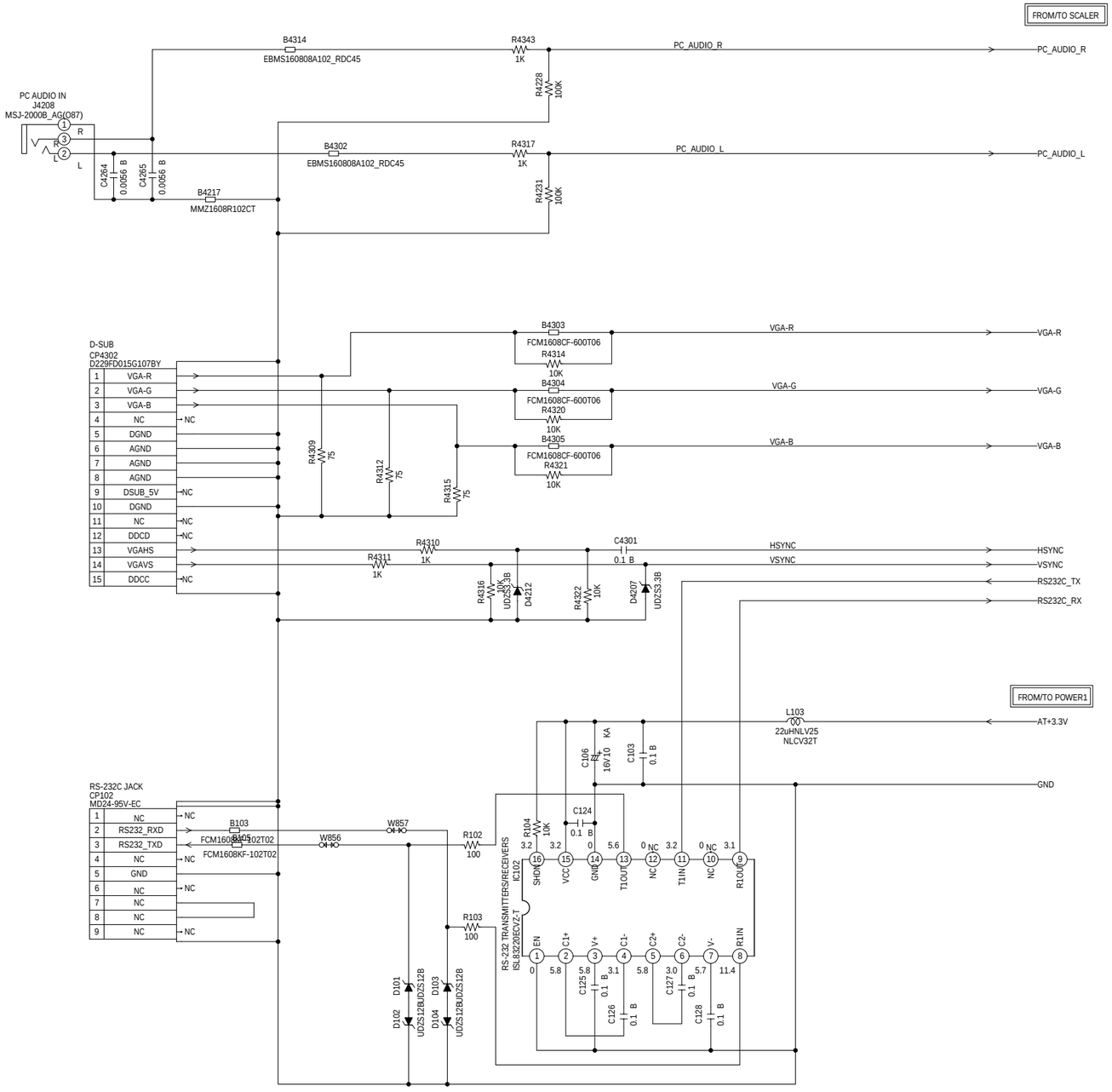
RSDS SCHEMATIC DIAGRAM

(MAIN PCB)



JACK SCHEMATIC DIAGRAM

(MAIN PCB)

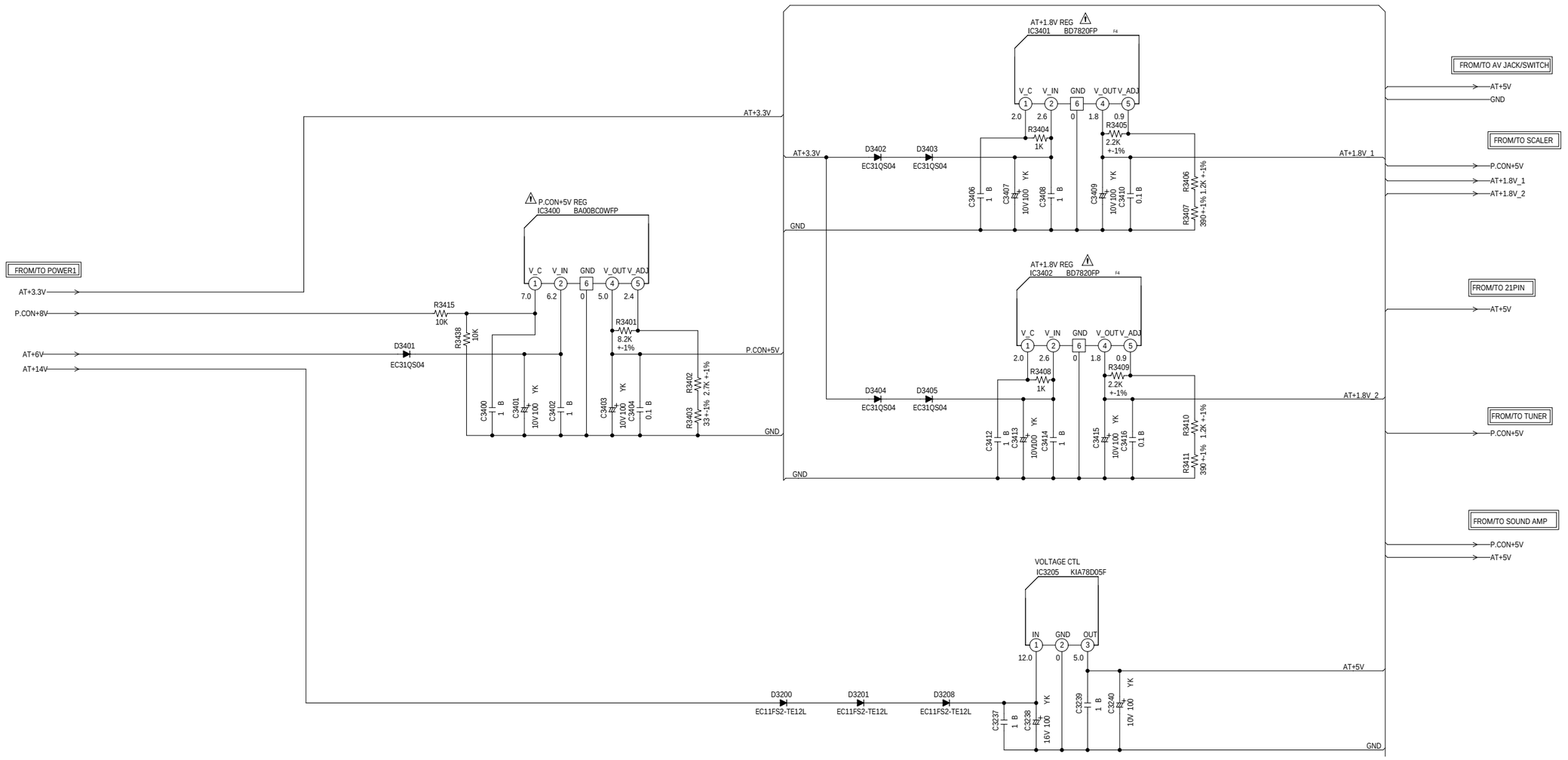


NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

PCBF40
CMF102

REGULATOR SCHEMATIC DIAGRAM
(MAIN PCB)



CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION:LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

PCBF40
CMF102

POWER2 SCHEMATIC DIAGRAM
(POWER PCB)

CAUTION: ⚠ IS THE LIVE CONNECTION

CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

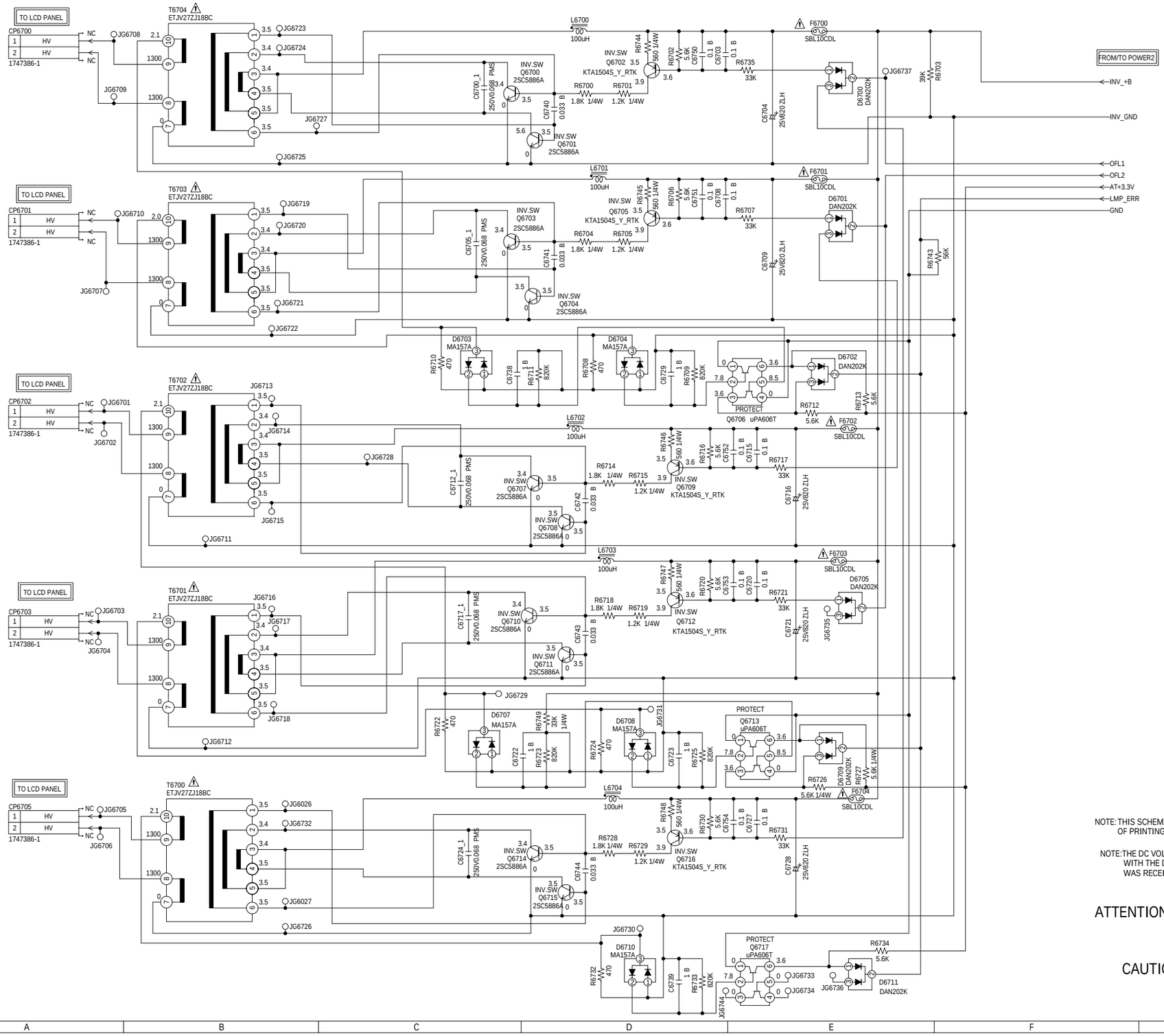
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

ATTENTION: ⚠ LES PIECES REPAREES PAR UN ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION: ⚠ SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY 。

INVERTER SCHEMATIC DIAGRAM

(POWER PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

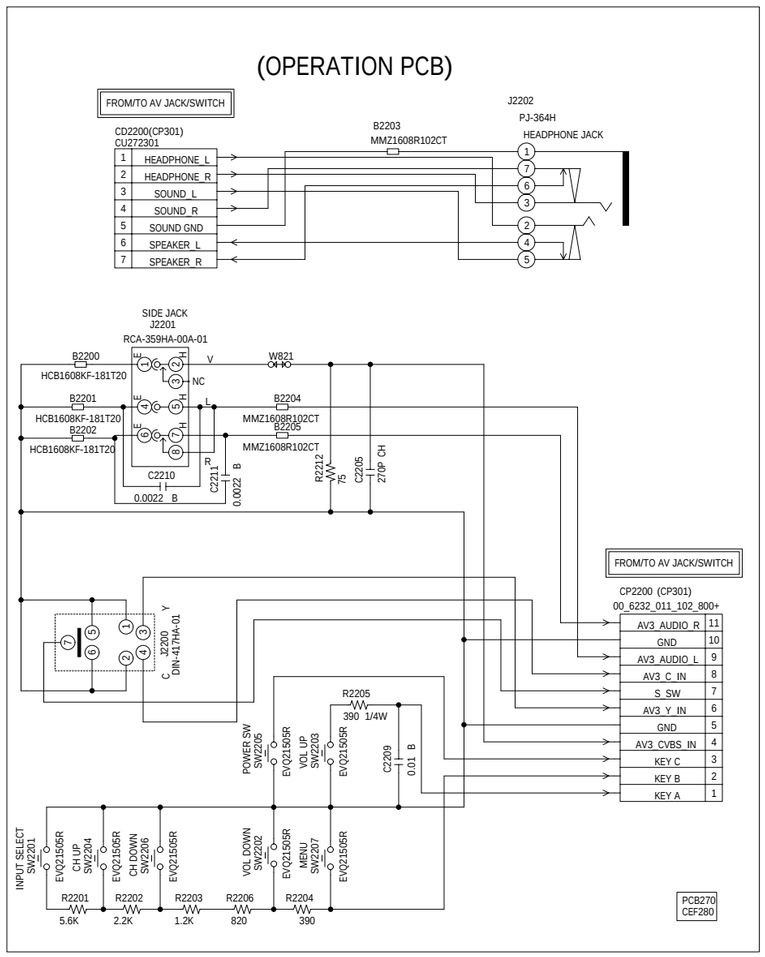
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY 。

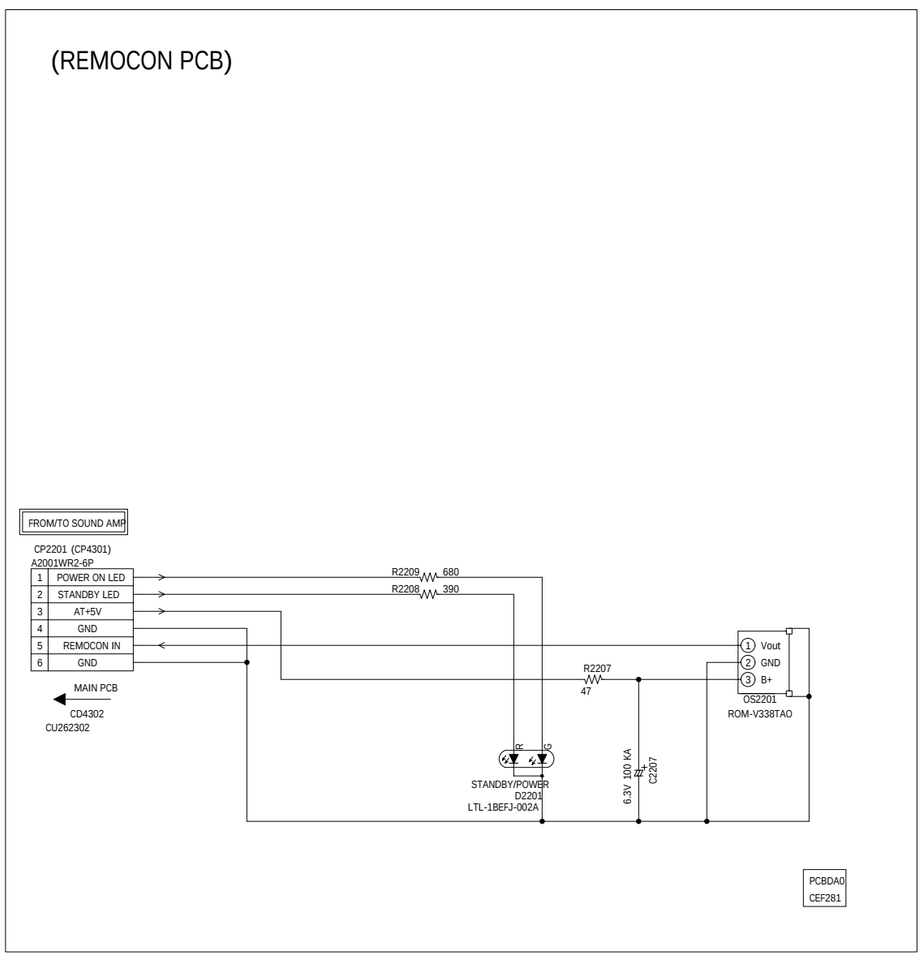
PCB240
CEF279

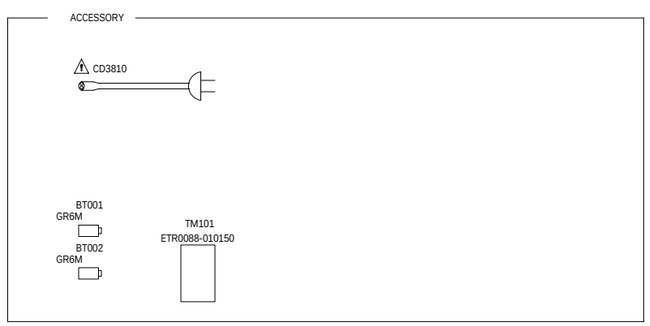
OPERATION/REMOCON SWITCH SCHEMATIC DIAGRAM

(OPERATION PCB)



(REMOCON PCB)





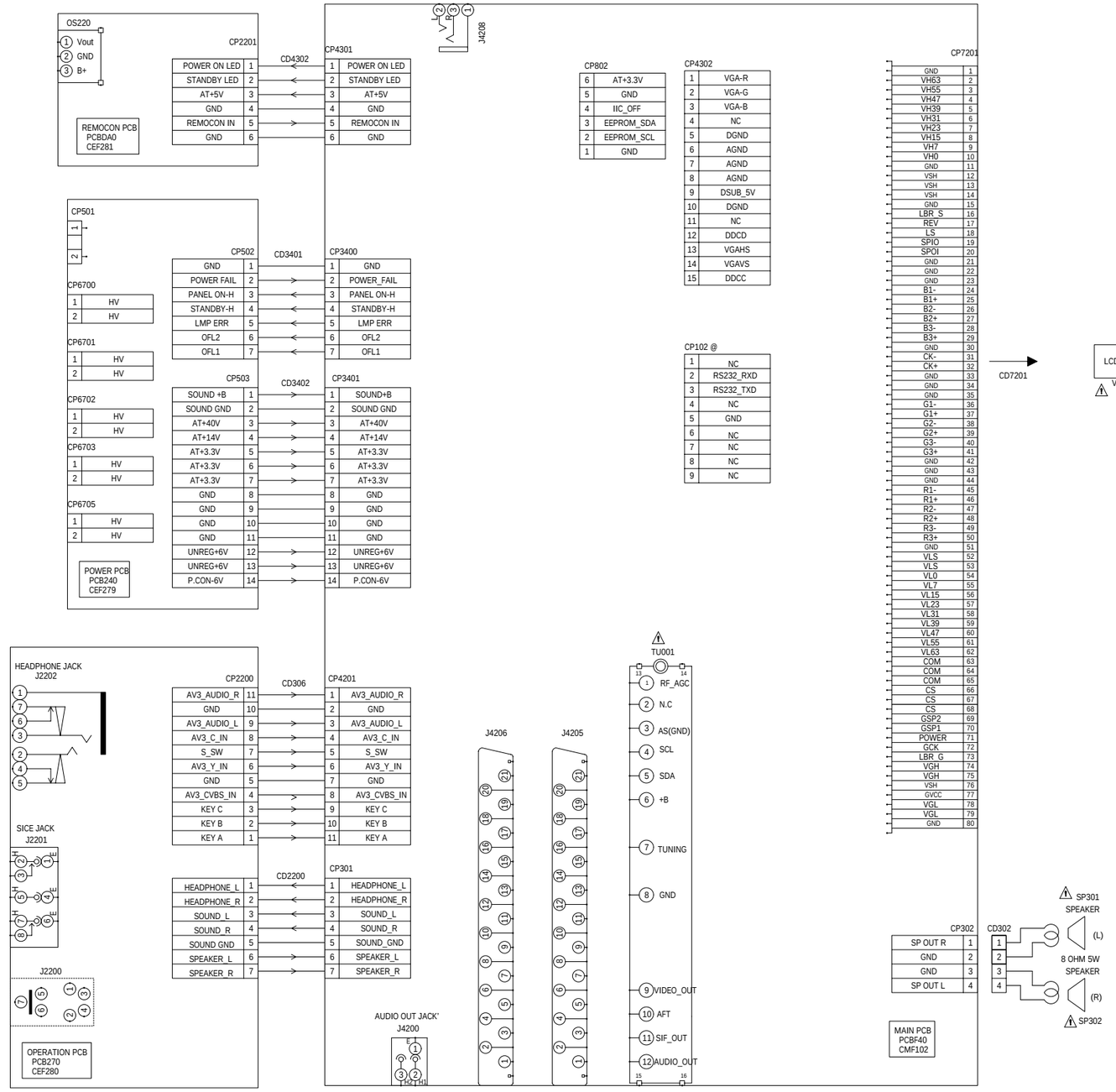
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

INTERCONNECTION DIAGRAM



CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION:LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

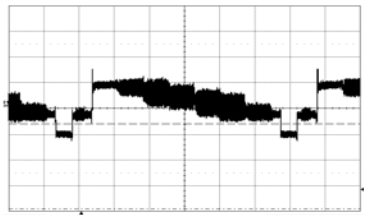
NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

WAVEFORMS

21PIN

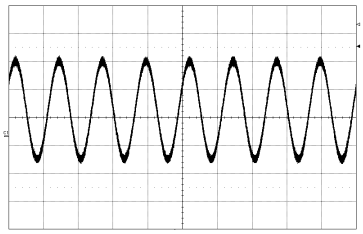
1

10 µs
0.5V



8

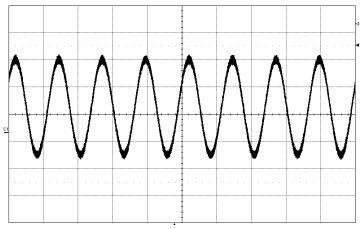
2ms
500mV



SCALER

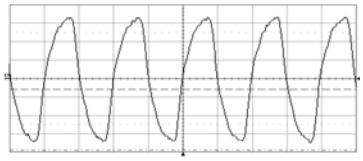
2

2ms
500mV



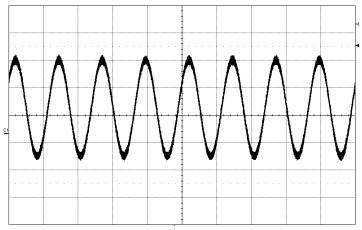
9

20ns
500mV



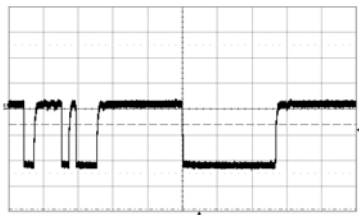
3

2ms
500mV



10

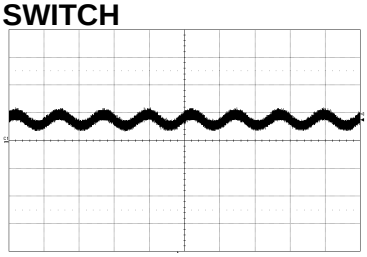
50 µs
2.0V



AV JACK/ SWITCH

4

2ms
2.0V

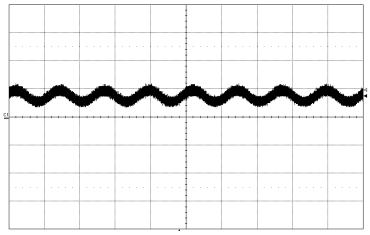


11

10 µs
2.0V

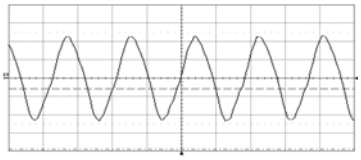
5

2ms
2.0V



12

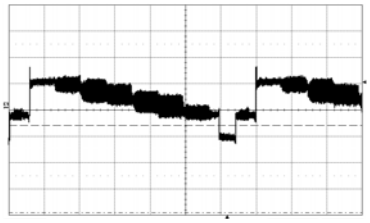
10ns
500mV



TUNER

6

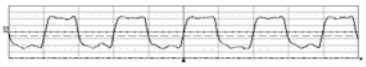
10 µs
5.0V



RSDS

13

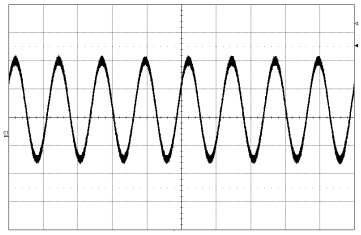
20ns
500mV



SOUND AMP

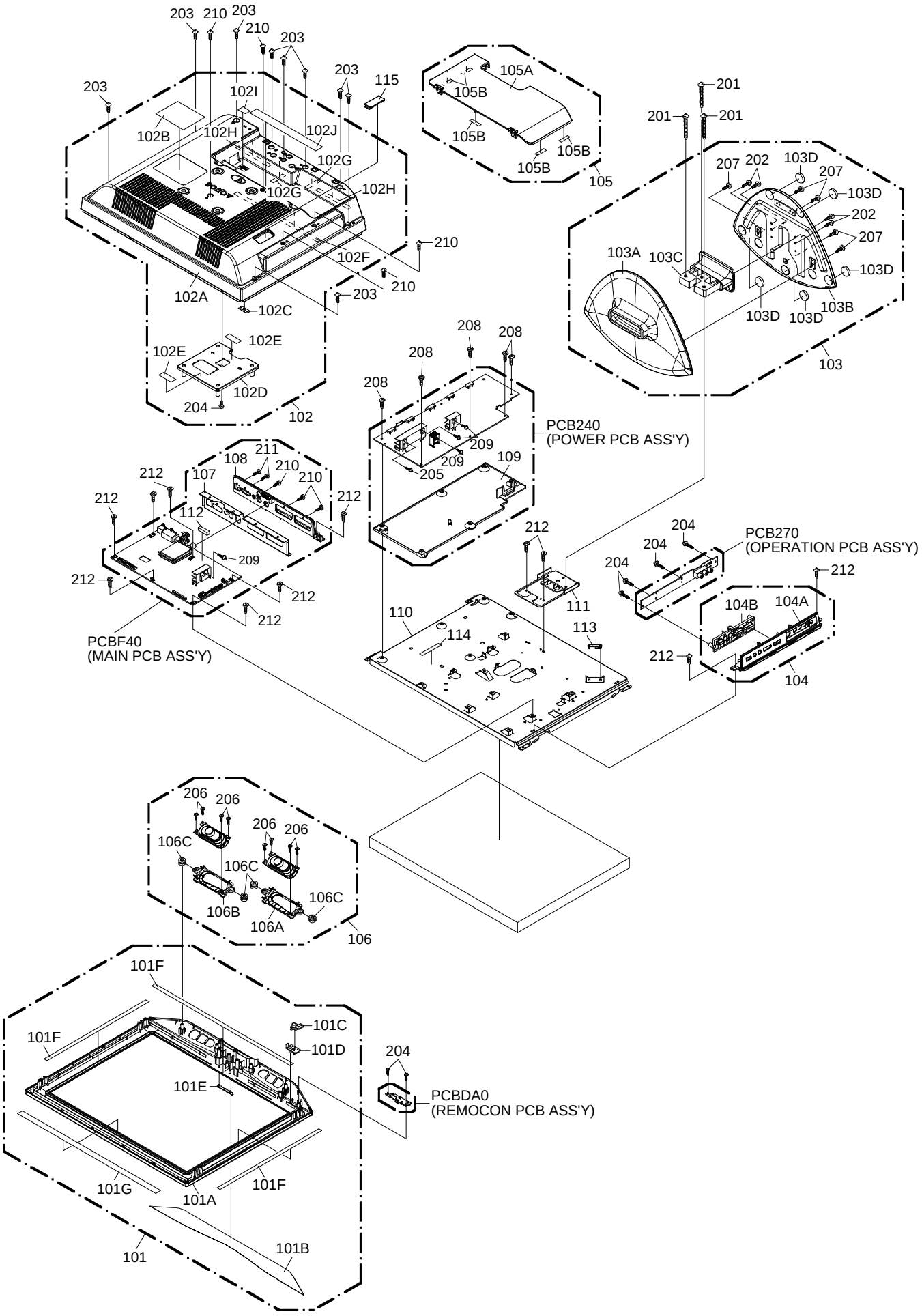
7

2.0ms
500mV

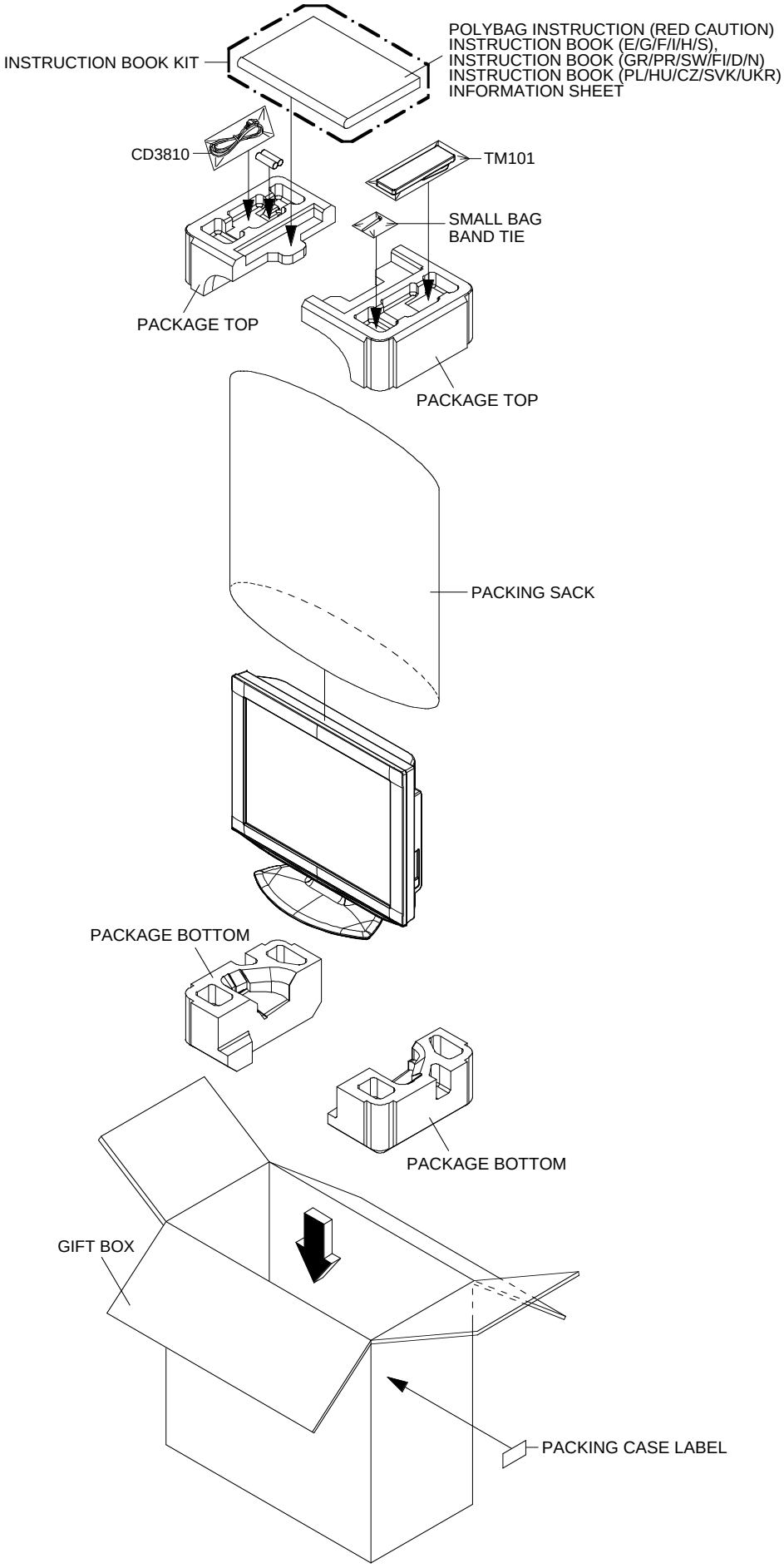


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

MECHANICAL EXPLODED VIEW



MECHANICAL EXPLODED VIEW
(PACKING DIAGRAM)



MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE
101	9JD7A7010276A	FRONT CABI ASS'Y	
101A	9JD701WPJ1482	CABINET FRONT	
101B	9JD702WNB0001	SHEET SPEAKER	
101C	9JD706WPA0026	COVER LED	
101D	9JD713WPA0412	GLASS LED	
101E	9JD7235270037	BADGE BRAND	
101F	9JD800WQ00124	FELT SHEET	
101G	9JD800WQ00112	FELT SHEET	9x390xT0.3
102	9JD7A7020118A	BACK CABI ASS'Y	
102A	9JD702WPA1284	CABINET BACK	
102B	9JD7225270039	SHEET RATING	
102C	9JD753CUAA001	ANGLE KENSINGTON	
102D	9JD761WSA0474	ANGLE BACK	
102E	9JD800WFA0066	CUSHION	30x14xT2
102F	9JD800WQ00103	FELT SHEET	9x250xT0.3
102G	9JD800WQ00120	FELT SHEET	
102H	9JD800WQ00122	FELT SHEET	
102I	9JD7230008304	SHEET AC INLET	
102J	9JD7230008306	SHEET JACK	
103	9JD7A7040028A	STAND ASS'Y	
103A	9JD704WPA0076	STAND	
103B	9JD704WPA0077	FRAME STAND	
103C	9JD761WSA0463	ANGLE STAND	
103D	9JD800WFA0119	CUSHION LEG	
104	9JD7A7110011A	PLATE BUTTON ASS'Y	
104A	9JD711WPD0713	PLATE BUTTON	
104B	9JD735WPB0357	BUTTON FRAME	
105	9JD7A7020123A	COVER BACK ASS'Y	
105A	9JD702WPA1289	COVER BACK	
105B	9JD800WQ0A062	FELT,SHEET	
106	9JDA31A14EX30L	SPEAKER CABI ASSY	
106A	9JD761WPA0466	HOLDER SPEAKER-L	
106B	9JD761WPA0467	HOLDER SPEAKER-R	
106C	9JD800WR00084	DAMPER SPEAKER	
107	9JD752WSA0647	SHIELD JACK	
108	9JD761WPA0468	PLATE JACK	
109	9JD761WPA0469	HOLDER PCB	
110	9JD761WSA0461	COVER LCD	
111	9JD761WSA0473	ANGLE FRAME	
112	9JD8965TS4025	CUSHION 65TS5-4	5x4x25
113	9JD899RFC21V0	HOLDER CORD	
114	9JD800WQ0A062	FELT,SHEET	
115	9JD702WPA1290	COVER CONNECTOR	
201	9JD8117540C0S	SCREW TAPPING(B0) TRUSS	4x30
202	9JD8117540A0U	SCREW TAPPING(B0) TRUSS	4x10
203	9JD8110630B0S	SCREW TAP TITE(P) BRAZIER	3x20
204	9JD8110630A0U	SCREW TAP TITE(P) BRAZIER	3x10
205	9JD810763080U	SCREW TAP TITE(S) BRAZIER	3x8
206	9JD811022680U	SCREW TAP TITE(P) BIND	2.6x8
207	9JD8110K3080U	SCREW TAP TITE(P) LAMIHEAD	3x8
208	9JD8109D30A0U	SCREW TAP TITE(B) WH8	3x10
209	9JD8109I30A0U	SCREW TAP TITE(B) WH7	3x10
210	9JD8109230A0S	SCREW TAP TITE(B) BIND	3x10
211	9JD810213080S	SCREW PAN	M3x8
212	9JD810923080U	SCREW TAP TITE(B) BIND	3x8
---	9JD7235270041	PACKING CASE LABEL	
---	9JD791WHAA155	PACKING SACK	
---	9JD791WHAA172	SMALL BAG	
---	9JD792PHA0001	PACKAGE TOP	
---	9JD792PHA0002	PACKAGE BOTTOM	
---	9JD793PCD0001	GIFT BOX	
---	9JD899SGR150W	BAND TIE	
---	9JDA31A14E975	INSTRUCTION BOOK KIT	
---	9JDJ31A0301B	INSTRUCTION BOOK(E/G/F/I/H/S)	
---	9JDJ31A0310B	INSTRUCTION BOOK(GR/PR/SW/FI/D/N)	
---	9JDJ31A0311B	INSTRUCTION BOOK(PL/HU/CZ/SVK/UKR)	
---	9JDJ31A0329A	INFORMATION SHEET	
---	9JDJA4ND100	POLYBAG INSTRUCTION(RED CAUTION)	
---	9JDJA4ND200	POLYBAG INSTRUCTION(RED CAUTION)	

ELECTRICAL REPLACEMENT PART LIST

REF. NO.	PART NO.	DESCRIPTION		CODE
		REMOCON PCB ASS'Y		
		*** PCB ***		
PCBDA0	9JDA31A14EDA0L	REMOCON PCB ASS'Y	CEF281A	
		*** DIODES ***		
D2201	9JD0021E9Q010	LED	LTL-1BEFJ-002A	
		*** CONNECTORS ***		
CD4302	9JD06CU262302	CORD CONNECTOR	CU262302	
CP2201	9JD069S260639	CONNECTOR PCB SIDE	A2001WR2-6P	
		*** OTHERS ***		
OS2201	9JD077A033001	REMOTE RECEIVER	ROM-V338TAO	
		MAIN PCB ASS'Y		
		*** PCB ***		
PCBF40	9JDA31A14EF40L	MAIN PCB ASS'Y	CMF102A	
		*** CAPACITORS ***		
C339	9JDE7EYF3102M	CE	1000 UF 25V	
		*** DIODES ***		
D101	9JDDE7RB1202B	DIODE ZENER	UDZS12B TE-177	
D102	9JDDE7RB1202B	DIODE ZENER	UDZS12B TE-177	
D103	9JDDE7RB1202B	DIODE ZENER	UDZS12B TE-177	
D104	9JDDE7RB1202B	DIODE ZENER	UDZS12B TE-177	
D800	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D802	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D803	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D804	9JDDD7R20S300	DIODE SCHOTTKY BARRIER	RB520S-30-TE61	
D805	9JDDD7R20S300	DIODE SCHOTTKY BARRIER	RB520S-30-TE61	
D806	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D807	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D808	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D809	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D810	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D811	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D812	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D813	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D814	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D815	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D816	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D817	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D818	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D819	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D820	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D821	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D822	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D823	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D824	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D825	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D826	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D827	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D828	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D829	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17	
D3200	9JDD28R11FS20	DIODE	EC11FS2-TE12L	

ELECTRICAL REPLACEMENT PART LIST

D3201	9JDD28R11FS20	DIODE	EC11FS2-TE12L
D3208	9JDD28R11FS20	DIODE	EC11FS2-TE12L
D3401	9JDD28R1QS040	DIODE	EC31QS04-TE12L
D3402	9JDD28R1QS040	DIODE	EC31QS04-TE12L
D3403	9JDD28R1QS040	DIODE	EC31QS04-TE12L
D3404	9JDD28R1QS040	DIODE	EC31QS04-TE12L
D3405	9JDD28R1QS040	DIODE	EC31QS04-TE12L
D3407	9JDDE7RB3602B	DIODE ZENER	UDZS36B TE-17
D3409	9JDD28R11FS20	DIODE	EC11FS2-TE12L
D3804	9JDD28R11FS20	DIODE	EC11FS2-TE12L
D4200	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17
D4205	9JDDE7RB1202B	DIODE ZENER	UDZS12B TE-177
D4206	9JDDE7RB1202B	DIODE ZENER	UDZS12B TE-177
D4207	9JDDE7RB3R32B	DIODE ZENER	UDZS3.3B TE-17
D4209	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17
D4210	9JDDE7RB4R72B	DIODE ZENER	UDZS4.7B TE-17
D4211	9JDDE7RB4R72B	DIODE ZENER	UDZS4.7B TE-17
D4212	9JDDE7RB3R32B	DIODE ZENER	UDZS3.3B TE-17
D4303	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17
D4305	9JDDGERMA1110	DIODE SILICON	MA111-(TX)
D4313	9JDDE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17
D7200	9JDD15R002500	DIODE SILICON	1SS250

*** ICS ***

IC102	9JDICMF032200	IC	ISL83220ECVZ-T
⚠IC302	9JDI03SP20520	IC	LA42052-E
IC801	9JDS31A03EE01	MEMORY DATA	AT24C256BN-10SU-1.8
IC802	9JDI9UF032290	IC	PST3229NR
IC803	9JDS31A14EM01	MEMORY DATA	VCT-6773G-FA-B3-000
IC3205	9JDI1KF98D050	IC	KIA78D05F
⚠IC3400	9JDI07F0C0WF0	IC	BA00BC0WFP-E2
⚠IC3401	9JDI07F078200	IC	BD7820FP-E2
⚠IC3402	9JDI07F078200	IC	BD7820FP-E2
⚠IC3403	9JDI1KJ9A431A	IC	KIA431A-AT
⚠IC3404	9JDI07F0C0WF0	IC	BA00BC0WFP-E2
IC7200	9JDI1SF023800	IC	KE454U2380TFP
IC7201	9JDI07J9139A0	IC	BD8139AEFV

*** TRANSISTORS ***

Q001	9JDT2AA5132E0	FET	KTK5132E-RTK/P
Q002	9JDT2AA5132E0	FET	KTK5132E-RTK/P
Q300	9JDTPAAB05001	COMPOUND TRANSISTOR	KRA102SRTK
Q301	9JDTCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q302	9JDTCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q303	9JDTCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q304	9JDTAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q3400	9JDTAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q3401	9JDTNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q3402	9JDTAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q3403	9JDTNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q3404	9JDTNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q3405	9JDTAAA01664Y	TRANSISTOR SILICON	KTA1664-Y-RTF/P
Q3406	9JDTNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q3407	9JDTAAA01664Y	TRANSISTOR SILICON	KTA1664-Y-RTF/P
Q3408	9JDTNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q3409	9JDTNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q4202	9JDTAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q4203	9JDTAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q4204	9JDTCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4205	9JDTCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4207	9JDTCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4208	9JDTCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4209	9JDTCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4210	9JDTCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4212	9JDTCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK

Q4213	9JDTAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q4214	9JDTAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q4215	9JDTCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4216	9JDTPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK
Q4217	9JDTPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK
Q4218	9JDTNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q4219	9JDTNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q4305	9JDTPAAB05001	COMPOUND TRANSISTOR	KRA102SRTK
Q4308	9JDTPAAB05001	COMPOUND TRANSISTOR	KRA102SRTK
Q4309	9JDTNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q4310	9JDTNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q7200	9JDT83J045200	TRANSISTOR SILICON	2SC4520T-TD-E
Q7201	9JDTAAA1544T0	TRANSISTOR SILICON	KTA1544T-RTK/P
Q7202	9JDT63J017290	TRANSISTOR SILICON	2SA1729-TD-E
Q7203	9JDTN7MD09001	COMPOUND,TRANSISTOR	DTC144EE TL
Q7204	9JDT27T030180	FET	2SK3018T106
Q7205	9JDT27T030180	FET	2SK3018T106

*** COILS ***

B001	9JD024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B002	9JD024HC56013	CORE,BEADS	FCM1608KF-601T02
B103	9JD024HC51023	CORE,BEADS	FCM1608KF-102T02
B105	9JD024HC51023	CORE,BEADS	FCM1608KF-102T02
B300	9JD024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B301	9JD024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B302	9JD024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B303	9JD024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B304	9JD024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B305	9JD024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B306	9JD024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B307	9JD024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B801	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B802	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B803	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B804	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B805	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B806	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B807	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B808	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B809	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B810	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B811	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B812	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B813	9JD024HC56005	CORE,BEADS	FCM1608CF-600T06
B818	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B819	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B3400	9JD024HC51216	CORE,BEADS	HCB1608KF-121T20
B3401	9JD024HC51216	CORE,BEADS	HCB1608KF-121T20
B3402	9JD024HC51216	CORE,BEADS	HCB1608KF-121T20
B3403	9JD024HC51216	CORE,BEADS	HCB1608KF-121T20
B3404	9JD024HC51216	CORE,BEADS	HCB1608KF-121T20
B3405	9JD024HC51216	CORE,BEADS	HCB1608KF-121T20
B4201	9JD024HC56005	CORE,BEADS	FCM1608CF-600T06
B4202	9JD024HC56005	CORE,BEADS	FCM1608CF-600T06
B4203	9JD024HC56013	CORE,BEADS	FCM1608KF-601T02
B4204	9JD024HC56013	CORE,BEADS	FCM1608KF-601T02
B4205	9JD0246C51024	CORE,BEADS	MMZ1608R102CT
B4206	9JD0246C51024	CORE,BEADS	MMZ1608R102CT
B4208	9JD024HC56005	CORE,BEADS	FCM1608CF-600T06
B4217	9JD0246C51024	CORE,BEADS	MMZ1608R102CT
B4218	9JD024HC56005	CORE,BEADS	FCM1608CF-600T06
B4302	9JD024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4303	9JD024HC56005	CORE,BEADS	FCM1608CF-600T06
B4304	9JD024HC56005	CORE,BEADS	FCM1608CF-600T06
B4305	9JD024HC56005	CORE,BEADS	FCM1608CF-600T06
B4306	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20

ELECTRICAL REPLACEMENT PART LIST

B4307	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B4309	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B4310	9JD024HC56005	CORE,BEADS	FCM1608CF-600T06
B4314	9JD024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4318	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B4323	9JD024HC56005	CORE,BEADS	FCM1608CF-600T06
B7201	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B7202	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B7203	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B7204	9JD024HC56005	CORE,BEADS	FCM1608CF-600T06
B7205	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
L103	9JD0216SD220J	COIL	22 UH
L800	9JD0216SD2R2J	COIL	2.2 UH
L802	9JD0216SD2R2J	COIL	2.2 UH
L803	9JD0216SD2R2J	COIL	2.2 UH
L804	9JD0216SD2R2J	COIL	2.2 UH
L805	9JD0216SD2R2J	COIL	2.2 UH
L806	9JD0216SD2R2J	COIL	2.2 UH
L3400	9JD021LA6470J	COIL	47 UH
L4202	9JD021LA6220J	COIL	22 UH
L4203	9JD021LA6220J	COIL	22 UH
L4204	9JD021LA6220J	COIL	22 UH
L4205	9JD021LA6220J	COIL	22 UH
L4206	9JD021LA6220J	COIL	22 UH
L4207	9JD021LA6220J	COIL	22 UH
L4208	9JD0216SD220J	COIL	22 UH
L4211	9JD021LA6220J	COIL	22 UH
L4212	9JD021LA6220J	COIL	22 UH
L4214	9JD021LA6220J	COIL	22 UH
L4217	9JD021LA6220J	COIL	22 UH
L4227	9JD0216SD220J	COIL	22 UH
L7201	9JD0216S8470K	COIL	47 UH
L7202	9JD0216SD2R2J	COIL	2.2 UH
		*** JACKS ***	
CP102	9JD063W100053	JACK	MD24-95V-EC
J4200	9JD060K411041	RCA JACK	AV2-13P2-07H
J4205	9JD063Y100070	SOCKET,21PIN	RGB-16C
J4206	9JD063Y100070	SOCKET,21PIN	RGB-16C
J4208	9JD060J131019	HEADPHONE JACK	MSJ-2000B_AG(O87)
		*** CONNECTORS ***	
CP301	9JD069S270629	CONNECTOR PCB SIDE	A2001WV2-7P
CP302	9JD069S140419	CONNECTOR PCB SIDE	A2502WV2-4P
CP802	9JD069S260629	CONNECTOR PCB SIDE	A2001WV2-6P
CP3400	9JD069S270639	CONNECTOR PCB SIDE	A2001WR2-7P
CP3401	9JD069S2E0639	CONNECTOR PCB SIDE	A2001WR2-14P
CP4201	9JD069EVB3030	CONNECTOR PCB SIDE	00_6232_011_006_800+
CP4301	9JD069S260629	CONNECTOR PCB SIDE	A2001WV2-6P
CP7201	9JD06AAY08019	CONNECTOR PCB SIDE	QS0CNA222WJZZYH(41)
		*** CRYSTAL & CERAMIC OSCILLATORS ***	
X801	9JD100DT02007	CRYSTAL	DSX840GA
		*** NETWORKS ***	
NR801	9JD110P4470M4	R,NETWORK	4D03WGJ0470T5E
NR802	9JD110P4470M4	R,NETWORK	4D03WGJ0470T5E
NR803	9JD110P4470M4	R,NETWORK	4D03WGJ0470T5E
NR7200	9JD110P4330M4	R,NETWORK	4D03WGJ0330T5E

ELECTRICAL REPLACEMENT PART LIST

		*** OTHERS ***	
CP4302	9JD06G2S21501	CONNECTOR PCB SIDE	D229FD015G107BY
SH4301	9JD126D000044	TERMINAL PIN	YQ-36
SH4302	9JD126D000044	TERMINAL PIN	YQ-36
SH4303	9JD126D000044	TERMINAL PIN	YQ-36
SH4304	9JD126D000044	TERMINAL PIN	YQ-36
SH4305	9JD126D000044	TERMINAL PIN	YQ-36
SH4306	9JD126D000044	TERMINAL PIN	YQ-36
		POWER PCB ASS'Y	
		*** PCB ***	
PCB240	9JDA31A14E240L	POWER PCB ASS'Y	CEF279A
		*** RESISTORS ***	
⚠R505	9JDRC31X1155J	RC	1.5M OHM 1W
⚠R506	9JDR3X181R27J	R,METAL OXIDE	0.27 OHM 1W
⚠R507	9JDR65584101J	R,FUSE	100 OHM 1/4W
⚠R511	9JDR3K781104J	R,METAL OXIDE	100K OHM 1W
⚠R514	9JDR63881R22J	R,FUSE	0.22 OHM 1W
⚠R516	9JDRC31X1126J	RC	12M OHM 1W
⚠R527	9JDR65584150J	R,FUSE	15 OHM 1/4W
⚠R528	9JDR65584150J	R,FUSE	15 OHM 1/4W
⚠R547	9JDR3K28A220J	R,METAL	22 OHM 2W
⚠R568	9JDR3X28A2R7J	R,METAL OXIDE	2.7 OHM 2W
		*** CAPACITORS ***	
⚠C503	9JDP2122B224M	CMP	0.22 UF 275V ECQUL
C504	9JDC03L0R7Q2K	CC	470 PF 2KV R
⚠C506	9JDP2122B104M	CMP	0.1 UF 275V ECQUL
⚠C509	9JDP2122B224M	CMP	0.22 UF 275V ECQUL
⚠C514	9JDE77CHH181M	CE	180 UF 400V
C515	9JDP332E4393J	CPP	0.039 UF 400V
⚠C522	9JDE8E2U5220D	CE	22 UF 50V
⚠C523	9JDE7EYF3182M	CE	1800 UF 25V
⚠C524	9JDE7EYF2102M	CE	1000 UF 16V
⚠C525	9JDE8E2U5470D	CE	47 UF 50V
⚠C526	9JDE8E2U5220D	CE	22 UF 50V
⚠C527	9JDE7EYF3182M	CE	1800 UF 25V
⚠C532	9JDE7EYF2102M	CE	1000 UF 16V
⚠C554	9JDCD39E0MH3M	CC	0.0022UF 250V
C6700	9JDP4J7F3683J	CMPP	0.068 UF 250V PMS
C6704	9JDE8E173821M	CE	820 UF 25V
C6705	9JDP4J7F3683J	CMPP	0.068 UF 250V PMS
C6709	9JDE8E173821M	CE	820 UF 25V
C6712	9JDP4J7F3683J	CMPP	0.068 UF 250V PMS
C6716	9JDE8E173821M	CE	820 UF 25V
C6717	9JDP4J7F3683J	CMPP	0.068 UF 250V PMS
C6721	9JDE8E173821M	CE	820 UF 25V
C6724	9JDP4J7F3683J	CMPP	0.068 UF 250V PMS
C6728	9JDE8E173821M	CE	820 UF 25V
		*** DIODES ***	
⚠D501	9JDD6C047110A	DIODE VARISTA	ENE471D-10A
⚠D502	9JDD4AT01H3E0	DIODE RECTIFIER	1H3-E
⚠D503	9JDD2WXN40050	DIODE SILICON	1N4005-EIC
⚠D504	9JDD2WXN40050	DIODE SILICON	1N4005-EIC
D505	9JDD4AT01H3E0	DIODE RECTIFIER	1H3-E
⚠D506	9JDD2WTRM11C0	DIODE SILICON	RM11C-EIC
⚠D507	9JDD2WTRM11C0	DIODE SILICON	RM11C-EIC
⚠D508	9JDD2WTRM11C0	DIODE SILICON	RM11C-EIC

ELECTRICAL REPLACEMENT PART LIST

⚠D509	9JDD2WTRM11C0	DIODE SILICON	RM11C-EIC
D510	9JDD97U06R21B	DIODE,ZENER	MTZJ6.2B T-77
D511	9JDD1VT001330	DIODE,SILICON	1SS133T-77
D512	9JDD2BXARS010	DIODE SILICON	SARS01-V1
D513	9JDD97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
⚠D514	9JDD4AT01H3E0	DIODE RECTIFIER	1H3-E
⚠D515	9JDD2BAMX22S0	DIODE SCHOTTKY	FMX-22S
D516	9JDD97U06R21B	DIODE,ZENER	MTZJ6.2B T-77
D517	9JDD4CRSK34A0	DIODE SCHOTTKY	SK34A
⚠D518	9JDD4AT01H3E0	DIODE RECTIFIER	1H3-E
⚠D519	9JDD2LT001F50	DIODE SILICON	1F5-E
⚠D520	9JDD23A0010J0	DIODE SCHOTTKY	SBR100-10J-CBC11
D521	9JDD1VT001330	DIODE,SILICON	1SS133T-77
D522	9JDD97U03R31B	DIODE,ZENER	MTZJ3.3B T-77
D523	9JDD97U01301B	DIODE,ZENER	MTZJ13B T-77
D524	9JDD1VT001330	DIODE,SILICON	1SS133T-77
D525	9JDD97U02001B	DIODE,ZENER	MTZJ20B T-77
D535	9JDD97U03001B	DIODE,ZENER	MTZJ30B T-77
⚠D536	9JDD2LKSR3400	DIODE SCHOTTKY	SR340-004
D6700	9JDD27PAN2020	DIODE,FAST RECOVERY	DAN202KT146
D6701	9JDD27PAN2020	DIODE,FAST RECOVERY	DAN202KT146
D6702	9JDD27PAN2020	DIODE,FAST RECOVERY	DAN202KT146
D6703	9JDDD1R0157A0	DIODE SILICON	MA157A-(TX)
D6704	9JDDD1R0157A0	DIODE SILICON	MA157A-(TX)
D6705	9JDD27PAN2020	DIODE,FAST RECOVERY	DAN202KT146
D6707	9JDDD1R0157A0	DIODE SILICON	MA157A-(TX)
D6708	9JDDD1R0157A0	DIODE SILICON	MA157A-(TX)
D6709	9JDD27PAN2020	DIODE,FAST RECOVERY	DAN202KT146
D6710	9JDDD1R0157A0	DIODE SILICON	MA157A-(TX)
D6711	9JDD27PAN2020	DIODE,FAST RECOVERY	DAN202KT146
		*** ICS ***	
⚠IC501	9JDI2BT067650	IC	STR-W6765
⚠IC502	9JD000220002W	PHOTO COUPLER	PS2561AL1-1-V(W)
⚠IC503	9JDI1KJ9A431A	IC	KIA431A-AT
⚠IC504	9JDI03T057790	IC	LA5779-E
		*** TRANSISTORS ***	
Q501	9JDTCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q502	9JDTPAAB05001	COMPOUND TRANSISTOR	KRA102SRTK
Q503	9JDTNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q504	9JDTNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q505	9JDTCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q506	9JDTAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q511	9JDTCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q512	9JDTAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q513	9JDTAAT01281Y	TRANSISTOR SILICON	KTA1281_Y
Q6700	9JDT85A058860	TRANSISTOR SILICON	2SC5886A
Q6701	9JDT85A058860	TRANSISTOR SILICON	2SC5886A
Q6702	9JDTAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q6703	9JDT85A058860	TRANSISTOR SILICON	2SC5886A
Q6704	9JDT85A058860	TRANSISTOR SILICON	2SC5886A
Q6705	9JDTAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q6706	9JDTS2M000051	COMPOUND TRANSISTOR	UPA606T-T1-A
Q6707	9JDT85A058860	TRANSISTOR SILICON	2SC5886A
Q6708	9JDT85A058860	TRANSISTOR SILICON	2SC5886A
Q6709	9JDTAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q6710	9JDT85A058860	TRANSISTOR SILICON	2SC5886A
Q6711	9JDT85A058860	TRANSISTOR SILICON	2SC5886A
Q6712	9JDTAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q6713	9JDTS2M000051	COMPOUND TRANSISTOR	UPA606T-T1-A
Q6714	9JDT85A058860	TRANSISTOR SILICON	2SC5886A
Q6715	9JDT85A058860	TRANSISTOR SILICON	2SC5886A
Q6716	9JDTAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q6717	9JDTS2M000051	COMPOUND TRANSISTOR	UPA606T-T1-A

ELECTRICAL REPLACEMENT PART LIST

*** COILS ***

B508	9JD024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
L504	9JD02167E220K	COIL	22 UH
L505	9JD02167B470J	COIL	47 UH
L506	9JD02186I6R8L	COIL	6.8 UH
L507	9JD02186I6R8L	COIL	6.8 UH
L509	9JD02167E220K	COIL	22 UH
⚠L510	9JD029X000113	COIL,LINE FILTER	SS24V-K07325
⚠L511	9JD029X000113	COIL,LINE FILTER	SS24V-K07325
L512	9JD02167B101J	COIL	100 UH
L513	9JD02120K470M	COIL	47 UH
L6700	9JD021L3J101K	COIL	100 UH
L6701	9JD021L3J101K	COIL	100 UH
L6702	9JD021L3J101K	COIL	100 UH
L6703	9JD021L3J101K	COIL	100 UH
L6704	9JD021L3J101K	COIL	100 UH

*** TRANSFORMERS ***

⚠T501	9JD0481400834	TRANSFORMER,SWITCHING	81400834
⚠T6700	9JD0481180011	TRANSFORMER,SWITCHING	ETJV27ZJ18BC
⚠T6701	9JD0481180011	TRANSFORMER,SWITCHING	ETJV27ZJ18BC
⚠T6702	9JD0481180011	TRANSFORMER,SWITCHING	ETJV27ZJ18BC
⚠T6703	9JD0481180011	TRANSFORMER,SWITCHING	ETJV27ZJ18BC
⚠T6704	9JD0481180011	TRANSFORMER,SWITCHING	ETJV27ZJ18BC

*** JACKS ***

⚠CP501	9JD064Q1A0003	JACK,AC	CCT2302-0911

*** CONNECTORS ***

CP502	9JD069S270629	CONNECTOR PCB SIDE	A2001WV2-7P
CP503	9JD069S2E0629	CONNECTOR PCB SIDE	A2001WV2-14P
CD3401	9JD06CU271301	CORD CONNECTOR	CU271301
CD3402	9JD06CU2E1301	CORD CONNECTOR	CU2E1301
CP6700	9JD0694W23019	CONNECTOR PCB SIDE	1747386-1
CP6701	9JD0694W23019	CONNECTOR PCB SIDE	1747386-1
CP6702	9JD0694W23019	CONNECTOR PCB SIDE	1747386-1
CP6703	9JD0694W23019	CONNECTOR PCB SIDE	1747386-1
CP6705	9JD0694W23019	CONNECTOR PCB SIDE	1747386-1

*** FUSES ***

⚠F501	9JD080NT04004	FUSE	50T040H
FH501	9JD06710T0009	HOLDER,FUSE	EYF-52BCY
FH502	9JD06710T0009	HOLDER,FUSE	EYF-52BCY
⚠F6700	9JD0804U01001	FUSE	SBL10CDL
⚠F6701	9JD0804U01001	FUSE	SBL10CDL
⚠F6702	9JD0804U01001	FUSE	SBL10CDL
⚠F6703	9JD0804U01001	FUSE	SBL10CDL
⚠F6704	9JD0804U01001	FUSE	SBL10CDL

*** THERMISTOR ***

⚠TH501	9JDDSR0LDNB00	THERMISTOR	NTPAA2R2LDNB0

*** OTHERS ***

EL2401	9JD124116281A	EYE LET	XRY16X28BD
EL2402	9JD124120301A	EYE LET	XRY20X30BD
SH501	9JD126D000044	TERMINAL PIN	YQ-36
SH502	9JD126D000044	TERMINAL PIN	YQ-36

ELECTRICAL REPLACEMENT PART LIST

SH503	9JD126D000044	TERMINAL PIN	YQ-36
SH507	9JD126D000044	TERMINAL PIN	YQ-36
		OPERATION PCB ASS'Y	
		*** PCB ***	
PCB270	9JDA31A14E270L	OPERATION PCB ASS'Y	CEF280A
		*** COILS ***	
B2200	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B2201	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B2202	9JD024HC51816	CORE,BEADS	HCB1608KF-181T20
B2203	9JD0246C51024	CORE,BEADS	MMZ1608R102CT
B2204	9JD0246C51024	CORE,BEADS	MMZ1608R102CT
B2205	9JD0246C51024	CORE,BEADS	MMZ1608R102CT
		*** JACKS ***	
J2201	9JD060R431033	RCA JACK	RCA-359HA-00A-01
J2202	9JD060R131024	HEADPHONE JACK	PJ-364H
		*** SWITCHES ***	
SW2201	9JD0504101T34	SWITCH,TACT	EVQ21505R
SW2202	9JD0504101T34	SWITCH,TACT	EVQ21505R
SW2203	9JD0504101T34	SWITCH,TACT	EVQ21505R
SW2204	9JD0504101T34	SWITCH,TACT	EVQ21505R
SW2205	9JD0504101T34	SWITCH,TACT	EVQ21505R
SW2206	9JD0504101T34	SWITCH,TACT	EVQ21505R
SW2207	9JD0504101T34	SWITCH,TACT	EVQ21505R
		*** CONNECTORS ***	
CD2200	9JD06CU272301	CORD CONNECTOR	CU272301
CP2200	9JD069EVB3050	CONNECTOR PCB SIDE	00_6232_011_102_800+
		*** OTHERS ***	
J2200	9JD062R750007	PLUG	DIN-417HA-01
		AND OTHERS	
		*** CONNECTORS ***	
CD302	9JD06CU144401	CORD CONNECTOR	CU144401
CD306	9JD122H0B0803	CORD JUMPER	2H0B0803
CD7201	9JD12BR080121	CORD JUMPER	FFC058012003509T1-A04
		*** TUNER ***	
⚠TU001	9JD0163Y03009	RF UNIT	TAFV-W323D
		*** AC CORD ***	
⚠CD3810	9JD120Q155804	CORD AC	P205-1324-4
		*** OTHERS ***	
BT001	9JD141R003018	BATTERY,MANGAN	GR6M
BT002	9JD141R003018	BATTERY,MANGAN	GR6M
⚠SP301	9JD070N435023	SPEAKER	YDP3085-2RN
⚠SP302	9JD070N435023	SPEAKER	YDP3085-2RN
TM101	9JD076B0NB020	TRANSMITTER	ETR0088-010151

ELECTRICAL REPLACEMENT PART LIST

⚠V2301	9JD0956120005	LCD	LK197V3GZ91

RESISTOR

RC.....	CARBON RESISTOR

CAPACITORS

CC.....	CERAMIC CAPACITOR
CE.....	ALUMI ELECTROLYTIC CAPACITOR
CP.....	POLYESTER CAPACITOR
CPP.....	POLYPROPYLENE CAPACITOR
CPL.....	PLASTIC CAPACITOR
CMP.....	METAL POLYESTER CAPACITOR
CMPL.....	METAL PLASTIC CAPACITOR
CMPP.....	METAL POLYPROPYLENE CAPACITOR

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